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The organic market in New Zealand

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Chapter 1
Introduction

The term *organic* relates to food and beverages that are produced by methods that comply with the standards of organic farming which is an alternative agricultural system. The International Federation of Organic Agriculture Movements (IFOAM) defined organic farming by four principles (IFOAM, 2015):

1. **The Principle of Health** - Organic agriculture should sustain and enhance the health of soil, plant, animal and human as one and indivisible.
2. **The Principle of Ecology** - Organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.
3. **The Principle of Fairness** - Organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.
4. **The Principle of Care** - Organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

The organic claim in food and beverages is a credence attribute. Credence attributes are qualities believed by a consumer to be present in a product even though they cannot be identified, experienced and inspected by consumers before or after purchase, other credence attributes are for example food safety, animal welfare and environmental protection (Saunders et al., 2015).

The Agribusiness and Economics Research Unit (AERU) at Lincoln University was commissioned by the Ministry of Primary Industries (MPI) to assess the organic market in New Zealand. The key research questions were:

- Who produces organic food products in New Zealand?
- What organic products are being produced in New Zealand, what is their value, and is this changing over time?
- How are the export markets for New Zealand organic food products changing over time?
- What are the rapidly growing markets for organics, and do they have a mandatory standard for organics?
- Does the term 'organic' on a food label command a premium, and if so is this premium consistent across markets?
- Is there a price premium for certified vs non-certified organic foods?
- What are alternative retail channels for organic products in New Zealand, e.g. social media, blogs.

In consultation with MPI, the report is structured as follows. The next chapter gives an overview of the current state of New Zealand's organic sector. Next, eight emerging overseas markets for organic food and beverages were identified in consultation with MPI. For each country, the current state of the organic market is described including market trends and import requirements for organic food and beverages from New Zealand. This is followed by a literature review of consumer attitudes towards organic food and beverages internationally and their willingness to pay for organic claims. Chapter 5 describes organic retail channels in New Zealand for organic food and beverages including alternative retail channels such as famers markets and box schemes as well as the use of social media. The report finishes with a brief conclusion in Chapter 6.

Chapter 2
New Zealand's market for organic food and beverages

2.1 Organic food production in New Zealand

The largest growth in New Zealand's organic sector occurred during the 1990s. Before that the organic sector existed predominantly through small-scale local sales, small farms and orchards, and co-operative schemes. The main driving forces of this development were two large companies for organic export products, these were Watties Frozen Foods Ltd (now Heinz Wattie Ltd) and the NZ Kiwifruit Marketing Board (now Zespri International Ltd) which began to experiment with organic production systems and in close collaboration with BioGro NZ as the first organic certifier in New Zealand (OANZ, 2016; Campbell & Fairweather, 1998; Saunders et al., 1997). Since then New Zealand's organic sector has grown, particularly for exports.

In 2015, there were 74,134 hectares under organic certification in New Zealand which represents almost 1 per cent of total agricultural land (FiBL, 2017). Table 2-1 shows the land area under organic certification by activity in New Zealand. This shows that in 2015, an area of 42,837 hectares were organic livestock, followed by 25,476 hectares for organic horticulture and 5,821 hectares for mixed/ other organic activities. The total organic certified land area has decreased by 31 per cent from 2012. This drop is mainly driven by a large decrease in organic land for livestock which dropped by 54 per cent. In contrast, significant increases were shown for organic land area for horticulture (+128 per cent) as well as land for mixed/ other organic activities (+91 per cent) in the three years from 2012, reflecting significant growth in certified organic vineyard and pipfruit production (Plant & Food, 2016; OANZ, 2016).

Table 2-1: Land area under organic certification by activity, 1997 – 2015

Land Area	1997	2002	2007	2009	2012	2015
Livestock (ha)	6,210	39,564	52,070	108,566	92,522	42,837
Horticulture (ha)	4,945	7,322	5,045	8,175	11,188	25,476
Mixed/Other (ha)	805		6,768	7,702	3,043	5,821
Total	**11,960**	**46,886**	**63,883**	**124,443**	**106,753**	**74,134**
	% change					
	1997-2002	**2002-2007**	**2007-2009**	**2009-2012**	**2012-2015**	
Livestock (ha)	537%	32%	109%	-15%	-54%	
Horticulture (ha)	48%	-31%	62%	37%	128%	
Mixed/Other (ha)	-100%		14%	-60%	91%	
Total	292%	36%	95%	-14%	-31%	

Source: based on OANZ, 2016.

Horticultural products dominate New Zealand's organic sector. Key producers include *Bostock's New Zealand* in Hawkes Bay for apples and Zespri for kiwifruit. *Bostock New Zealand* has grown to over 500 hectares of certified land and is responsible for marketing and exporting 85 per cent of New Zealand's organic apples (Bostock's New Zealand, 2017a).

Zespri Kiwifruit is one of the largest producers and exporters of organic fruit in New Zealand. The average orchard output of organic green increased from 5,973 trays per hectare in 2014/15 to 7,373 trays per hectare in 2015/16. In 2015/16 the organic green kiwifruit orchard gate return per hectare was NZ$52,917 which was 20 per cent more than from the previous year. In 2015/16 a number of 3.9 million of New Zealand grown organic green kiwifruit trays were sold which was 10 per cent more than in the previous year and almost a 20 per cent rise from 2009/10. Total revenue for organic kiwifruit was NZ$38.3 million in 2015/16 which increased by 12 per cent from the previous year and 26 per cent from 2009/10 (Zespri, 2017).

Organic wine is a fast growing sector in the organic market with more than 5 per cent of New Zealand's wine production either certified organic or in conversion. In 2017, there were 39 fully certified wineries which produce wines solely from certified organic or biodynamic grapes, four wineries that produce some wines from fully certified organic vineyards, and have the rest of their vineyard land under conversion to organics, and 15 wineries which produce some wines from organic vineyards. In 2015, approximately 6 per cent of all domestic vineyard land was certified organic (Organic Winegrowers New Zealand, 2016). The key organic wine producers in New Zealand are *Seresin Estate Ltd; Villa Maria Estate Ltd* and *Yealands Estate Wines Ltd.*

In the organic dairy sector, approximately 25,000 dairy cows are under organic management. *Fonterra* holds the largest share of organic farms in New Zealand. The majority of the remaining organic dairy farms are members of the *Organic Dairy Hub Cooperative* (Dairy Hub NZ). *Organic Dairy Hub NZ* helps to source and market milk on behalf of its members from all regions in New Zealand. It projected its milk supply would be over 2.5m kg/ms for the 2016/17 season. Thirty farmers signed contracts to supply the co-operative for the 2015/16 season. A

key initial market for the Hub is Green Valley Dairies which has operated a processing factory and organic farm since 2003. Other producers include the *Lewis Road Creamery, Zany Zeus, Massimos Italian Cheeses, Oob Organic, Puhoi Valley, The Cheese Barn* and *Naturalea* (Organic Dairy Hub, 2017; OANZ, 2016).

In the organic meat sector there are approximately 100 organic sheep and beef farms in New Zealand with farm sizes varying from 200 hectares to over 10,000 hectares. Exports of organic lamb from New Zealand started in 1995 mainly going to UK supermarkets. In 2009, the company *Organic Futures* was established in the South Island to assist the development of the organic meat market in New Zealand, in close collaboration with *ANZCO, Silver Fern Farms* and *the Alliance meat company*. However, *Organic Futures* estimated that up to one-third of the prime organic meat produced in New Zealand is still going to conventional markets. *Organic Futures* works with *ANZCO* to develop an organic meat brand for high quality markets in Asia and the Pacific to assist market growth. Thirty South Island sheep and beef farms are currently member of the *Organic Futures Group* (OEANZ, 2014b).

Most organic beef and lamb producers are members of the *Organic Dairy and Pastoral Group (ODPG).* With more than 200 members, it is the largest organic farming body in New Zealand. As stated above a key player in the New Zealand meat market is *ANZCO Foods* which is one of New Zealand's largest meat exporters but has a strong position in organic beef and lamb, as well as having certified the first organic processing plant in the North Island in 2014. Another key player in the organic meat sector is *Harmony* which produce AsureQuality certified beef and lamb as well as free-range pork, exporting their products to Hong Kong and Singapore. *Ingleby Farms* based in Gisborne is part of a Swedish-owned company which applies principles of sustainable farming (OEANZ, 2014b). With regards to poultry, *Bostock's New Zealand* in Hawkes Bay produces BioGroNZ certified organic free range chicken on their organic apple orchards (Bostock's Organic Free Range Chicken, 2014).

New Zealand has four certifiers of organic products. The two largest certifiers are *BioGro New Zealand* and *AsureQuality Limited*. These are IFOAM accredited and allow market access to countries including the USA, European Union, Australia, South East Asia, and Japan, based on the international Codex Alinorm 99/22, the European Union regulations and the Australian National Standard (OEANZ, 2017).

AsureQuality supplies organic certification to organic producers, processors and retailers in the dairy, meat, seafood, horticulture, wine, arable and pharmaceutical sectors. Organic audits are commonly performed on farms, orchards, apiaries, aquaculture farms and processors as well as on 'inputs' (e.g. fertilisers). In 2017, a total number of 437 producers, processors and retailers were certified by *AsureQuality. AsureQuality* is a participant in the Official Organic Assurance Programme (OOAP). This is a voluntary export programme by MPI that facilitates the exporting to specific markets (Organics Exporters Association New Zealand, 2017b; AsureQuality, 2017). The programme will be described in more detail in Section 2.3 of this report.

BioGro New Zealand is New Zealand's largest and certifier for organic produce and products, certifying over 600 producers, farmers and manufacturers across New Zealand and the Pacific.

The scheme was established in 1983, and it operates across the organic production, processing, farm input supply, export, and retail sectors. *BioGro New Zealand* is a participant of the OOAP programme and it also enables market access to Japan through its Recognised Certification Organisation relationship with ICS Japan (BioGroNZ, 2017; Organics Exporters Association New Zealand, 2017b).

The other two organic certifiers in New Zealand are the *NZ Biodynamics Association* and *Organic Farm NZ.* The *NZ Biodynamics Association* is a certifier of biodynamically-produced organic products and their members include farmers, processors, orchardists, commercial growers and home gardeners. The *NZ Biodynamics Association* is part of Demeter International, a world-wide biodynamic system and uses their Demeter certification. In 2017, there were 22 producers and processors with Demeter certification in New Zealand (NZ Bio Dynamic Association, 2017).

Organic Farm NZ was launched in 2002 and it emerged from a government tender to set up a certification system for domestic market participants. Certification under Organic Farm NZ is significantly cheaper than BioGro NZ and AsureQuality schemes that are also export-focussed. Organic Farm NZ has around 170 members with an average of 10 hectares per producer (ranging from less than 1 hectare up to 100 hectares). *OrganicFarm NZ* uses a "pod" system for its audits which works on a 'peer review' process. A group of between 3 to 5 growers (a pod) will peer review one another. Peer review involves a review of the producer's Property Management Plan, their inputs and outputs, and a property inspection. This occurs annually for every member of the Pod. Alternatively, producers have the ability to be audited individually by an independent audit (Organics Exporters Association New Zealand, 2017b; OrganicFarmNZ, 2017).

Also, Standards NZ developed a voluntary standard for organic production (NZS 8410:2003) through an extensive consultative process. The standard sets out the minimum requirements for the production, handling, processing and labelling of organic products including plants, plant products, animals and animal products. One if its objectives was to develop a baseline for products being labelled 'organic' domestically (Standards New Zealand, 2003).

The Organics Aotearoa New Zealand Market Report (OANZ, 2016) estimated the organic certification activity by compiling data on organic certified producers from the four certifiers in New Zealand their licensee databases on the number of licensees and land area under certification. As shown in the Table 2-2, there were 997 licensees and 1,500 licensed operations in 2015. The number of licensees and operations has dropped by 224 (18 per cent) and 265 (15 per cent) respectively between 2012 and 2015. Table 2-3 presents the number of organic operations by activity between 2012 and 2015. This shows that organic operations in most agricultural operations categories have dropped in that period, with the largest decrease shown in honey operations (-50 per cent). In contrast, organic aquaculture operations increased by 14 per cent between 2012 and 2015.

Table 2-2: Number of organic licensees and operations*, 1997-2015

	1997	2007	2009	2012	2015
Number of Licensees	335	860	1,145	1,221	997
Number of Operations		1,206	1,416	1,765	1,500
	% change				
	1997-2007	**2007-2009**	**2009-2012**	**2012-2015**	
Number of Licensees	156.7%	33%	6%	-18%	
Number of Operations		17.4%	24.6%	-15%	

* Each farmer, grower, processor, transporter and retailer in the organic sector is counted as a licensee. Each operation across the production chain is counted separately as a licensed operation. A single licensee may have multiple licensed operations (e.g. if a grower produces organic apples and processes apples into organic apple juice this would be counted as a single licensee but as two licensed operations).

Source: based on OANZ, 2016.

Table 2-3: Number of organic operations/licensees by activity, 2012-2015

	2012	2015	Percentage change 2012 -2015
Livestock	168	139	-17%
Dairy	99	84	-15%
Horticulture	720	610	-15%
Apiary	18	9	-50%
Aquaculture	7	8	14%
Import	12	17	42%
Processing	274	285	4%
Retail	18	19	6%
Transport	12	8	-33%
Wholesale	24	42	75%
Mixed/Other	413	317	-23%
Total	**1,765**	**1,538**	**-13%**

Source: OANZ, 2016.

2.2 Organic food consumption in New Zealand

Consumption of organic products is growing in New Zealand. The Research Institute of Organic Agriculture (FiBL) estimated that the value of organic retails sales in New Zealand was approximately NZ$192 million (124 million Euros) in 2015 which has grown by 52 per cent from the previous year and by 72 per cent between 2011 and 2015 (see Table 2-4). New Zealand consumer per capita spending was valued at NZ$42.24 (27.35 Euros) annually on

organic products which means New Zealanders are the 17th highest spenders per capita on organic products in the world (FiBL, 2017; OTA, 2016).

Table 2-4: New Zealand's organic sector, key indicators, 2011 – 2015

	2011	2012	2013	2014	2015
Retail sales, all (Million €)	71.70	81.93	81.93	81.93	123.88
Retail sales, all (€/person)	16.23	18.60	18.60	18.60	27.35

Source: FiBL, 2017.

The lack of a single source of information shows the difficulty in estimating the exact size of the New Zealand organic market. In their 2016 report, OANZ estimated grocery sales of organic products in New Zealandthrough a census of organic specialty shops, results from the AC Nielsen Scan Track database[1], and review of domestic sales from respondents to an export survey. Results showed that in 2015, organic product sales accounted for NZ$167.2 million in New Zealand supermarkets, which represents an increase of almost 30 per cent for the year 2012, as shown in Table 2-5. This is less than the above stated NZ$192 million as estimated by FiBL (2017).

Table 2-5: Organic product sales in New Zealand supermarkets, 2011 – 2015

Year	Value NZ$ million	Unit sales (in million)
2011	62.8	-
2012	67.5	-
2013	109.2	30.8
2014	130.1	34.9
2015	167.2	42.7

Note: These figures are derived from the AC Nielsen Scan Track records of organic sales through all supermarkets in New Zealand. These figures do not include sales of fresh fruit, vegetables or meat.

Source: OANZ, 2016.

The majority of organic products in New Zealand are sold in supermarkets, however a smaller amount is sold in specialty shops. OANZ (2016) estimated the growth of sales value at specialty shops and supermarkets between 2007 and 2015 (Table 2-6). It shows that domestic organic sales totalled NZ$218 million in 2015 with 77 per cent of sales occurring in supermarkets and 11 per cent in specialty shops. This is in line with findings from Miller et al. 2017, as discussed in detail in Chapter 5.

1 The Nielsen Scan Track database collects scanner data across all major supermarkets in New Zealand and provides analysis of grocery trends, using trade and product category data for 300+FMCG (fast moving consumer goods) scanned grocery categories.

Table 2-6: Value of organic product sales in specialty shops and supermarkets, in NZ$million, 2007 - 2015

	2007	2009	2012	2015
Grocery sales via supermarkets	-	53.3	67.6	167.1
Fruit and vegetables sales via supermarkets*	-	-	-	25
Sales via specialty shops	8.6		25.5	25.6
Total				**217.8**

*An estimate of supermarket organic fruit and vegetable sales was used based on responses to the specialty shop survey, export survey (domestic sales), and interviews with industry representatives. Estimates for fruit and vegetable sales for 2012 are provided but these are less accurate than those provided for 2015.

Source: OANZ, 2016.

Table 2-7 presents some examples for organic sales by brand and category including their growth between 2015 and 2017. It can be seen that the majority of organic brands experienced a significant growth between 2015 and 2017, particularly in the dairy sector with *Lewis Road Creamery* and *Puhoi Valley* more than doubling their sales in this period. Also, sales of organic brands for bread and breakfast cereals have increased between 2015 and 2017 with for example *Dovedale* increasing their sales by more than two thirds in this two-year period.

Table 2-7: New Zealand supermarket sales of selected organic brands by type, in NZ$000, 2015-2017

Product Category	Product Type	Brand	2015	2016	2017	% change 2015-2017
Dairy	Butter & margarine	Lewis Road Creamery	1,261.00	1,914.10	2,988.20	137%
		Organic Times	282.90	327.90	393.30	39%
		Ceres Organics	47.70	128.10	137.00	187%
	Cheese (excluding cultured)	Puhoi Valley	8,549.40	9,023.60	9,468.60	11%
		Retro Organics	99.40	121.80	100.60	1%
		The Cheese Barn	7.20	5.90	5.10	-29%
		Organic Village	0.80	2.40	2.40	200%
	Cheese (cultured)	Zany Zeus	9.80	13.60	19.70	101%
		The Cheese Barn		3.40	4.00	18%
	Fresh milk and cream	Lewis Road Creamery	5,660.10	11,426.70	12,516.50	121%
		Puhoi Valley		3,038.50	6,730.70	122%
		Naturalea	2,965.70	2,482.10	2,244.70	-24%
		Green Valley	490.70	533.60	389.70	-21%
		Retro Organics	26.80	45.70	56.50	111%
		Zany Zeus	74.90	55.80	50.60	-32%
		Simply Organic	538.60	66.60		-88%
	Yoghurt and dairy food	Puhoi Valley	9,258.20	8,371.40	9,223.90	0%
		Biofarm	3,675.00	3,400.70	3,258.30	-11%
		Naturalea	3,517.90	3,202.50	3,127.90	-11%
		Clearwaters Organic	1,260.40	1,214.00	1,291.40	2%
		Zorganic	15.00	48.10	106.20	608%
		The Cheese Barn	21.00	20.20	23.40	11%
		Zany Zeus		1.00	1.90	90%
Grocery	Baby food	Only Organic	7815.70	8985.80	10297.30	32%
	Bread	Dovedale	406.30	415.10	681.20	68%
		Breadman	225.60	258.50	260.40	15%
		Purebread	254.90	236.90	152.30	-40%
	Breakfast cereals	Ceres	2700.50	3183.30	3225.50	19%
		Nicolas Organics	292.80	312.50	298.80	2%

Source: Nielsen ScanTrack, 2017.

With regards to different product types of organic sales, OANZ (2016) estimated that in 2015 organic sales were dominated by fresh fruit and vegetables (39 per cent), followed by processed foods (17 per cent), then meat (13 per cent) (see Table 2-8). Between 2012 and 2015 sales of organic fresh fruit and vegetables increased while the percentage share of sales of processed organic foods dropped in the same period. Sales of organic meat remained at 13 per cent between 2012 and 2015.

Table 2-8: Organics sales in specialty shops by type, in per cent, 2007 - 2015

	2009	2012	2015
Processed Foods	38	34	17.4
Fresh fruit and vegetables	26	27	39.4
Meat	12	13	12.9
Dairy	9	10	
Beverages	4	2	6.4
Cosmetics	5	7	9.4
Other*	6	7	14.5
Total	100	100	100

* A broad variety of products constitute the ”Other” category, with a number of respondents indicating the popularity of organic cleaning and gardening products. While it was not possible given the form of responses provided to calculate these products as unique categories, future censuses of specialty shops may make this possible.

Source: OANZ, 2016.

The New Zealand organic market is projected to grow in the future. Growth in sales of organic food and beverages of 8.4 per cent are predicted for 2017 and the annual growth rate is anticipated to be 8.3 per cent from 2017 to 2020 (Australian Organic Ltd, 2017).

2.3 Organic food exports

New Zealand’s organic produce is predominantly exported. The Research Institute of Organic Agriculture (FiBL) estimated that the value of exports of organic produce in New Zealand was approximately NZ$233.19 million in 2015 which grew by 12 per cent from the previous year and by 22 per cent between 2011 and 2015 (FiBL, 2017).

Similarly, OANZ (2016) stated that in 2015 exports of organically certified food and beverages were valued at NZ$240 million with the largest share from fruit and vegetables (NZ$108 million), followed by dairy (NZ$68 million) (see Table 2-9). The largest increase was in organic dairy exports which grew by 888 per cent between 2007 and 2015 while organically certified fruit and vegetables exports grew by 28 per cent. In contrast, the value of honey exports dropped by 97 per cent since 2012. In their 2016 report, OANZ explained that number of honey producers and exporters have either exited organic certification or have experienced a significant reduction in production volume due to the spread of varroa mite, an external parasite that attacks honey bees. This is also reflected in the certification figures shown in

Table 2-3 in Section 2.1 of this report, with a 50 per cent decrease in certified apiary operations (OANZ, 2016).

Table 2-9: New Zealand exports of organically certified produce, in NZ$million, 2007-2015

	2007	2009	2012	2015
Fresh Fruit and Vegetables	88.3	85.9	96.9	108.1
Dairy	7.0	27.9	37.0	68.3
Meat and Wool	8.9	9.2	10.1	
Processed Food and Ingredients	6.1	20.3	29.3	25.2
Wine and Beer	3.9	17.0	11.0	24.7
Other Beverages			17.8	10.1
Honey	4.0	8.3	7.9	0.2
Other	2.2	2.0	5.0	3.9
Total	**120.4**	**170.5**	**215.0**	**240.5**

Source: OANZ, 2016.

The increase in organic dairy exports is led by demand in overseas markets with projections to increase. These markets with strong growth are likely to require more imports which indicates potential for an increase in New Zealand organic dairy exports. The global organic dairy market (value) is projected to increase by 6.2 per cent by 2018 (OMSCO, 2015).

Table 2-10 shows the destinations of New Zealand organic exports for a number of years between 2002 and 2015. This shows that Europe and North America were the main export destinations in 2015, each receiving a quarter of New Zealand organic exports. This is followed by Australia (16 per cent), then China (10 per cent). Interestingly, while organic exports to China and other Asian countries were growing, organic exports to Japan and Korea were decreasing over time. In the future, organic exports to China are likely to increase as New Zealand is the first country to sign a mutual recognition arrangement for organic certification with China due to come into effect in mid-2017 (OEANZ, 2017). This will be described in more detail in section 3.3 of this report.

Table 2-10: Organic exports by destination, percentage share, 2002-2015

	2002	2007	2009	2012	2015
North America	15%	27%	22%	28%	24%
Europe	41%	46%	37%	27%	26%
Australia	1%	4%	19%	15%	16%
Japan	26%	12%	9%	10%	6%
Korea	-	5%	8%	11%	7%
China (incl. HK)	-	-	1%	3%	10%
Other Asia	1%	5%	3%	6%	9%
Others	17%	1%	1%	0%	1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Source: OANZ, 2016.

New Zealand exporters can join the voluntary scheme of Official Organic Assurance programme (OOAP) administered by the Ministry of Primary Industries (MPI). MPI has an agreement with some countries to facilitate the export of organic products. Requirements are based on the Overseas Market Access Requirements (OMARs) for each country, usually resulting in export controls that are equivalent to the destination country's own organic standard. The scheme covers the European Union (EU), Japan, Switzerland, Taiwan and the USA (with restrictions) and the following products are covered: processed plant and animal products for human or animal consumption (for example, dairy products and fruit juices), unprocessed plant products, animal products and animals (for example, fruit and vegetables, seeds and unprocessed raw wool) (MPI, 2017a).

In 2015, there were 487 operators (794 operations) registered under the OOAP which is a 15 per cent decrease of operators from the 2013 calendar year. However the number of certificates for the major markets rose. In 2015, 582 certificates were issued for consignments exported to the EU which represents an increase of 21 per cent in the number of certificates issued from the previous year. Consignments for organic exports to the US totalled 390, increasing by 16 per cent from the previous year, 108 consignments for exports to Taiwan, increasing 27 per cent to the previous year, three for Japan and two for Norway. The products exported under the programme during 2015/2016 were: fresh fruit, processed fruit, processed plant products, dairy products, meat, apiculture products, wine, wine made from organic grapes, seeds, and other beverages (MPI, 2016)

As stated in the 2016 report from OANZ, an increasing amount of the domestic demand for organic products is being supplied from imports of organic products. There are no specific organic regulations in New Zealand. However, organic produce imported into New Zealand must meet the general requirements of food safety and labelling regulations (Australian Organic Ltd., 2017). Large importers of organic products to New Zealand are Ceres (Auckland) and Chantal Organics (Hawkes Bay) which both cover a broad range of organic groceries.

2.4 Conclusion

Despite recent decreases in organic land and operations, the New Zealand organic sector (by value) is growing. However, there is no consistent data on the domestic organic market and different sources were used to define the market and its key players.

The total size of the sector (including domestic sales and exports) was estimated between $457 million and $467 million which is a 30 per cent increase from 2012. In 2015, exports were valued NZ$240 million growing by 12 per cent from 2012. This indicates that the domestic market for organic products is growing faster than organic exports.

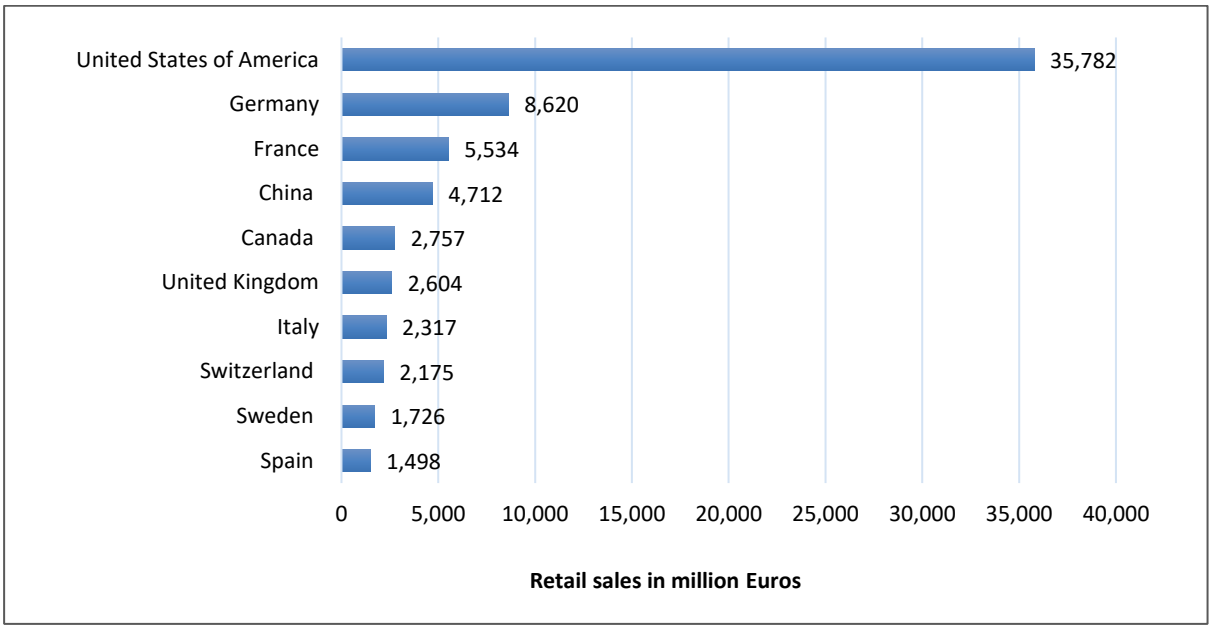
Chapter 3
Potential and emerging overseas markets for organic food and beverages relevant to New Zealand and their import requirements for organics

3.1 The global organic market

In 2015, a total of 50.9 million hectares globally were under organic management, a growth of 6.5 million hectares from 2014, and there were 2.4 million organic producers. Hence, the organic market is growing worldwide. A number of 179 countries report organic farming activities globally (Willer & Lernoud, 2017).

In 2015, the global market for organic food and beverages (by value) was approximately NZ$115.8 billion (75 billion Euros). The United States is the leading market accounting for approximately NZ$55.43 billion (35.9 billion Euros), followed by Germany (approximately NZ$12.81 billion; 8.6 billion Euros), France (approximately NZ$8.5 billion; 5.5 billion Euros), and China (approximately NZ$7.25 billion; 4.7 billion Euros) (see Figure 3-1). In 2015, most of the major markets showed double-digit growth rates. The highest per capita spending was in Switzerland (approximately NZ$404 Euros; 262 Euros), and Denmark had the highest organic market share (8.4 per cent of the total food market) (Willer & Lernoud, 2017).

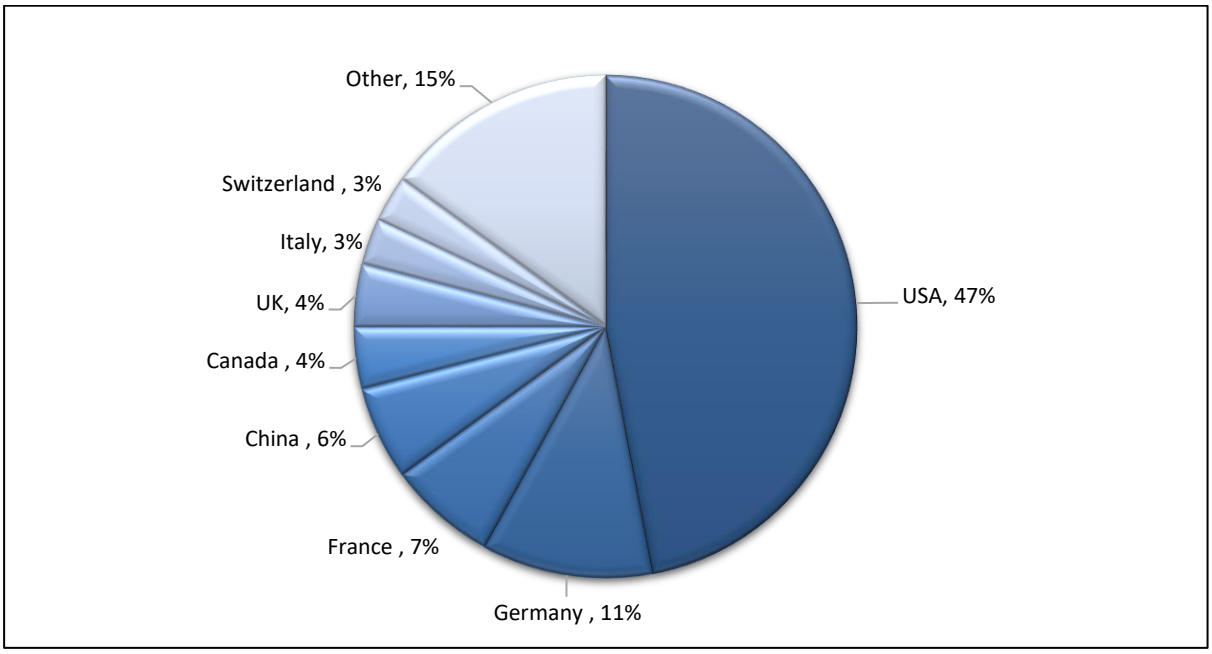
Figure 3-1: The Top 10 largest country markets for organics in 2015



Source: Willer & Lernoud, 2017.

Figure 3-2 presents the global distribution of retail sales value by country, and it can be seen that in 2015 almost half of the global market share was in the USA (47 per cent), followed by Germany (11 per cent), then France (7 per cent) and China (6 per cent).

Figure 3-2: Distribution of retail sales value by country, in per cent, 2015



Source: Willer & Lernoud, 2017.

Globally, there are numerous organic regulations using different standards and labels. A recent development in relation to an international mutual recognition of the term 'organic' was the development of the organic certification harmonisation tool 'Common Objectives of Organic Standards' (COROS) (OANZ, 2016). Between 2003 and 2008 the International Task Force on Harmonization and Equivalence in Organic Agriculture (ITF) was convened by the Food and Agriculture Organization of the United Nations (FAO), the International Federation of Organic Agriculture Movements (IFOAM) and the United Nations Conference on Trade and Development (UNCTAD), it was aimed to facilitate trade in organic products as a response to difficulties of organic producers and exporters from the different organic regulations, standards and labels worldwide. The "Common Objectives and Requirements of Organic Standards" (COROS) is a practical instrument for assessing equivalence of organic standards by basing the assessment on common objectives (FAO, 2012).

New Zealand is heavily dependent on its agricultural exports, and in 2015 almost 1 per cent of its exports were organic products (OANZ, 2016). As the global organic market is projected to grow in the future, eight emerging overseas markets for organic food and beverages were identified with potential for increased organic exports from New Zealand in consultation with MPI. These countries are also listed in the OOAP priority planner (MPI, 2017b). The selected markets are the USA, China, Australia, United Kingdom, Germany, France, Japan and the Republic of Korea (formerly South Korea).

In this chapter, for each country, the organic market and its import requirements for New Zealand exporters into these countries will be described. This chapter draws, among other sources, upon the 2017 yearbook of 'World of Organic Agriculture' which reports global trends and statistics published by the International Federation of Organic Agriculture Movements (IFOAM) and the Research Institute of Organic Agriculture (FiBL). This includes information on 160 individual countries from international organisations such as the United Nations International Trade Centre (UNITC) and the Food and Agriculture Organisation (FAO). The 2017 yearbook collates data from research and surveys from 2015 and 2016 (Willer & Lernoud, 2017).

3.2 USA

In 2015, the total area of US organic production was 2.02 million hectares, representing almost 1 per cent of total land area (see Table 3-1). While land area for organic production dropped between 2013 and 2014 (-28.6 per cent), this area increased between 2014 and 2015 (+30.5 per cent). However, the number of total organic producers in the US increased between 2011 and 2015 (+15.5 per cent), with a total of 14,871 organic producers in the US in 2015 (FIBL, 2017).

The US is the world's largest organic market (by value), accounting for 47 per cent of the global organic retail market (by value) (Willer & Lernoud, 2017). Total organic sales in the US reached 35.8 billion Euros by the end of 2015, surpassing the second largest retail market (Germany at 8.6 billion Euros in 2015), with organic sales experiencing 89 per cent growth between 2011 and 2015. US consumers also spent an estimated 111.20 Euros per capita on organics in 2015 (FiBL, 2017).

In 2015, organic exports were valued at 2.4 billion Euros, while imports were 980 million Euros (FiBL, 2017). In 2016, New Zealand's organic exports to the US were valued at NZ$60 million, representing 23 per cent of total New Zealand organic exports (MPI, 2017b).

Table 3-1: The organic market in the US, key indicators, 2011 – 2015

	2011	2012	2013	2014	2015
Area, all (ha)	2,178,470	2,178,470	2,178,470	1,554,517	2,029,327
Area, share of total (%)	0.64	0.64	0.64	0.46	0.59
Exports, all (million €)*	295.97	348.61	404.78	2,408.73	2,408.73
Imports, all (million €)*	479.70	386.22	1,036.53	980.00	980.00
Operators, producers (n)	12,880	12,880	12,880	13,282	14,871
Retail sales, all (million €)	18,919.54	22,589.50	24,346.81	27,062.10	35,781.88
Retail sales, all (€/ person)		72.20	76.64	85.29	111.20

*Please note that this figure does not cover all exports/imports.

Source: FiBL, 2017.

Organics represented approximately 4 per cent of total food sales in the US in 2012. Fresh fruit and vegetables were the highest selling category of organic food products in 2012 (43 per cent), followed by dairy (15 per cent), packaged/prepared foods (11 per cent), beverages (11 per cent), bread/grains (9 per cent), snack foods (5 per cent), meat/fish/poultry (3 per cent) and condiments (3 per cent) (USDA ERS, 2017).

The USA is the largest market worldwide for organic dairy products with sales estimated over US$6 billion in 2015, up 10 per cent from 2014. Dairy is the second biggest organic food category in the USA behind fresh produce, it accounts for 15 per cent of total organic food and beverages. Milk is the largest sector within organic dairy with sales of US$3.3 billion in 2015, up 6.3 per cent from the previous year. While the regular milk market is projected to decline 5 per cent by 2020, organic milk is predicted to increase by 18 per cent, then organic milk will account for 11 per cent of milk sales (OMSCO, 2017).

US consumers typically purchase organic products from three main channels: conventional grocery retailers, specialty stores and direct-to-consumer channels. As of April 2017, increased consumer demand has driven a higher number of retailers to stock organic products, including approximately 75 per cent of conventional grocery retailers and approximately 20,000 specialty food stores (USDA ERS, 2017).

Two large companies for organic products in the US market are *Hain Celestial Group Inc* (largest organic food market share) and *Starbucks Corp* (largest organic beverage share). Private label organic products are also important in the US market, comprising 10 per cent of the total organic market share for foods and 14.3 per cent for beverages (OTA, 2016).

More information regarding US consumer trends, particularly in relation to perceptions of and preferences for organic food and beverages, can be found in Chapter 4 of this report.

Standards and requirements for New Zealand exporters

On average, New Zealand sends approximately NZ$60 million worth of organic products to the US annually, representing the single largest market for New Zealand organic exports (MPI, 2017b). The United States has a recognition agreement with New Zealand. This allows MPI to accredit certifying agents to the USDA organic standards. These certifiers are authorised to certify organic farms and processing facilities, ensuring that organic products meet or exceed the requirements of the US National Organic Programme (NOP) standards. These products can then exported for sale in the United States.

In order to export to the US, New Zealand exporters must be certified by an accredited certifier (BioGro or AsureQuality). They must also register with MPI to the OOAP, and inform MPI of all organic shipments to the US. Certifying bodies are responsible for issuing appropriate trade certificates on request (OEANZ, 2014a). In addition to meeting organic-specific criteria, organic exporters must also comply with standard market access requirements for the US (MAF, 2011).

This means that currently, New Zealand organic exporters intending to send their products to the US are required to meet the US organic requirements, which can be technically challenging and places significant additional production costs on New Zealand producers/exporters. In response, in October 2012, MPI applied for an Organic Equivalence Agreement (OEA) with the US. This would give the ability to New Zealand operators to meet the requirements of the MPI OOAP Technical Rules, instead of the NOP requirements. This would facilitate exports to the US as the Technical Rules requirements are more suitable to New Zealand farming systems. As part of this application process, the USDA conducted an external audit of MPI's OOAP (OEANZ, 2014a).

3.3 China

In 2015, the total area of organic production in China was 1.6 million hectares, representing 0.3 per cent of total land area. Land area for organic production has decreased significantly in recent years, as shown in Table 3-2. In 2015, there were 12,697 organic operators in China, comprising 9,990 producers and 2,707 processors (FIBL, 2017).

China is the world's fifth-largest market for organics (by value), accounting for 6 per cent of global organic market (by value) (Willer & Lernoud, 2017). Total organic sales in China reached 4.7 billion Euros in 2015, with almost 500 per cent growth in organic sales between 2011 and 2015. Chinese consumers also spent an estimated 3.42 Euros per capita on organics in 2015 (FIBL, 2017).

Chinese organic exports were valued at 466.8 million Euros in 2015, with approximately 1,198 exporters and 66 importers operating in the same year (FIBL, 2017). In 2016, New Zealand's organic exports to China were valued at NZ$27 million, representing 11 per cent of total New Zealand organic exports (MPI, 2017b).

Table 3-2: The organic market in China, key indicators, 2011 – 2015

	2011	2012	2013	2014	2015
Area, all (ha)	1,900,000	1,900,000	2,094,000	1,925,000	1,609,928
Area, share of total (%)	0.36	0.36	0.40	0.37	0.31
Exports, all (million €)	300.00	233.49	364.50	466.78	466.78
Operators, exporters(n)				1,198	1,198
Operators, importers (n)				66	66
Operators, processors (n)				2,707	2,707
Operators, producers (n)				9,990	9,990
Retail sales, all (million €)	790.84	790.84	2,430.00	3,700.98	4,712.00
Retail sales, all (€/ person)	0.58	0.58	1.77	2.70	3.42

Source: FiBL, 2017.

In 2016, the Chinese organic food and beverage market was valued at approximately US$2.5 billion, increasing by 23 per cent from the previous year. It is projected to grow significantly in the future with an approximate annual growth rate of 15 per cent between 2017 and 2020 which is the strongest overall growth rate in this category internationally (Australian Organic Ltd., 2017).

Although China's organic market has experienced extensive growth in recent years, it is still relatively a small percentage of sales and has the potential to grow considerably (Australian Organic Ltd., 2017).

Organic milk is the highest sold organic product type in China, representing 95 per cent of total market value (Australian Organic, 2017). Two milk companies – Inner Mongolia Yili and Inner Mongolia Mengniu - accounted for a 67 per cent value share of total organic food and

beverage products in 2014. However, for organic beverages, there is much more fragmentation, with Huangshan Guangming Tea Industrial Co Ltd having the largest market share (18 per cent) of the Chinese organic beverages market in 2014 (OTA, 2016).

It is argued that a consumer perception of organic products being niche, as well as a lack of trust in organic accreditation, are the main barriers to organic food and beverage consumption in China. Due to this, consumer acceptance of organic products beyond milk is limited, and it is argued that it is likely to remain the case (OTA, 2016).

More information on Chinese consumer trends, particularly in relation to attitudes and perceptions of organic food and beverages, can be found in Chapter 4.

Standards and requirements for New Zealand exporters

China currently implements a compulsory certification system for organic products, ruled by the National Standard of the People's Republic of China. Due to the occurence of food scares, the Chinese government has periodically tightened requirements for this standard. This includes the requirement of certified producers and processors to complete an audit report and enter this into the National Food Safety Information System database in order to receive certification. This also requires auditors to visit production units within China between every two and five years to assure that operations are suitable (Australian Organic Ltd., 2013).

Unlike the US and EU, China does not have organic equivalence agreements with foreign countries. Instead, organic exporters are required to have their products certified by Chinese standards in order to gain market access. Exporters are specifically required to be certified by one of two Chinese organic certifying bodies – China Organic Food Certification Centre (COFCC) and/or Organic Food Development Centre (OFSC) (OTA, 2016).

However, in November 2016, China signed a Mutual Recognition Arrangement (MRA) with New Zealand to allow for New Zealand-certified organic exports to be automatically certified in China and vice versa. This is also provided that at least 95 per cent of ingredients in these products have been produced in either New Zealand or China. Exporters with products whereby more than 5 per cent of ingredients have been sourced from a different country are required to be certified by a Chinese Organic Certification company. New Zealand organic exporters are also required to affix their products with unique 17 digit code labels, allowing Chinese consumers to validate the authenticity of the product online. This is the first ever agreement of this kind to be entered into by China with any other foreign country (OEANZ, 2017d), as well as the world's first bilateral organic certification agreement (Willer & Lernoud, 2017).

3.4 Australia

Australia is the country with the largest organic agricultural land globally (22.7 million hectares) (Willer & Lernoud, 2017), however it is likely to reflect the extensive production systems in some sectors. Table 3-3 shows the key indicators for the Australian organic market between 2011 and 2015. This shows that the share in organic agricultural land of the total was 6 per cent in 2015, increasing by almost 1 per cent from the previous year. In the same year, there were 2,426 operators (processors and producers). The number of operators increased by 7 per cent from 2014. In addition, the Australian Organic Market Report (2017) shows the figures for organic operators also increased in 2016 to a total number of 3,238 organic operators (processors and producers).

The table further shows that retail sales were 961 million Euros in 2015 (FiBl, 2017), ranking it the 13th largest market in the world (by value) (Australian Organic Ltd., 2017). Australian consumers spent an estimated 42 Euros per capita on organic food which makes it the 16th largest per capita spend on organic products globally (Willer & Lernoud, 2017; Australian Organic Ltd., 2017).

Australian organic exports were valued 248 million Euros while imports were 107 million Euros in 2016 (FiBL, 2017). In 2016, New Zealand's organic exports to Australia were valued NZ$36 million which represented 14 per cent of total New Zealand organic exports (MPI, 2017b).

Table 3-3: The Organic market in Australia, key indicators, 2011 – 2015

	2011	2012	2013	2014	2015
Area, all (ha)	12,001,724	12,001,724	17,150,000	18,340,000	22,690,000
Area, share of total (%)	2.93	2.93	4.19	4.51	5.58
Exports, all (Million €)	123	101.55	247.75	247.75	247.75
Imports, all (Million €)		177.31	107.08	107.08	107.08
Operators, processors (n)	765	765	719	719	719
Operators, producers (n)	2,129	2,129	1,707	1,707	1,876
Retail sales, all (Million €)	656.59	926.89	961.59	961.59	961.59
Retail sales, all (€/person)	29.48	41	41.57	41.57	41.57

Source: FiBL, 2017.

Interestingly, the Australian organic dairy market has nearly doubled in size from 2008 to 2013. However, since then the organic dairy market has declined which is partially due to strong competition from other 'healthy' milk products such as a2 milk (OMSCO, 2017).

The largest company (by sales) in organic food and beverages is *Bellamy's Australia Ltd*, which maintains 8 per cent of total sales. *Bellamy* is followed by *Groupe Lactalis,* and *PZ Cussons Plc* (OTA, 2016).

Growth of sales in organic food and beverages in 2017 is predicted to be 4.3 per cent, with an annual growth rate of 3.8 per cent for the period 2017–20 (Australian Organic Ltd., 2017).

Some minor consumer trends have been identified by the OTA (2016) which reported a fast growing market for breakfast cereals and baby food as well as organic fresh coffee sales are also experiencing high growth rates (OTA, 2016).

Standards and requirements for exporters from New Zealand

Australia's voluntary National Standard for Organic and Biodynamic Produce provides consumer protection for organic products using the existing Trade Practices Act 1974 (TPA) which is frequently updated (Willer & Lernoud, 2017). However, the Australian Standard is only a base or reference standard. Produce sold domestically in Australia as organic are not required by law to be certified but many organic businesses choose to be certified by an organic certification body for credibility and to gain consumer trust. The Australian Standard outlines the minimum requirements to be met by growers and manufacturers wanting to label their products 'organic' and 'biodynamic'. It provides a set of procedures to be followed for the production, preparation, transportation, marketing and labelling of organic and biodynamic products, including food and processed food (Willer & Lernoud, 2017).

By law, organic exports from Australia must be certified in accordance with at least the National Standard by an organisation accredited the Australian Government. However, each accredited certifier can develop and apply its own unique standards as long as it is compliant with the National Standard. The National Standard is administered by the Australian Department of Agriculture and Water Resources (DAWR) and the Organic Industry Standards and Certification Council (OISCC) (Willer & Lernoud, 2017). For all organic exports over 10kg or 10 litres, an Organic Produce Certificate (OPC) is required, irrespective of whether the importing country requires it (Australian Organic Ltd., 2013).

As mentioned above, there is no mandatory requirement for certification of organic products sold domestically in Australia. However, all foods produced or imported for sale in Australia, including organic food, must be labelled in accordance with the Food Standards Code developed by Food Standards Australia New Zealand (FSANZ). FSANZ protects the health and safety of the Australians (and New Zealanders) by maintaining a safe food supply (Australian Government Department for Agriculture and Water Resources, 2017).

Hence, unlike the USA or the EU there is no single government or regional label/logo for organic and biodynamic produce, and each accredited certifier allows the use of its own logo. OISCC has recently developed a voluntary Australian logo to meet the requirements of some importing countries such as the Republic of Korea that require an official government mark of certification by the exporting country. The Australian accreditation and certification regime allows organic produce to leave Australia in compliance with Australian law but does not guarantee compliance with an importing country’s organic regulations. However, an equivalence agreement can been negotiated between Australia and other countries to smooth the process of organic trade between them. In the absence of government-to-government agreements, some industry associations have developed direct accreditation with importing country authorities (such as the ISADA and the Korean Ministry of Agriculture, Food and Rural Affairs) (Willer & Lernoud, 2017).

3.5 Germany

In 2015, there were 1.1 million hectares of organic farmland in Germany which increased by 4 per cent from 2014. The share of organic land to total agricultural land was 7 per cent in 2015 as shown in Table 3-4. In 2015, there were a total of 41,585 organic operators in Germany, including importers, processors and producers which was an increase of 13 per cent from the previous year.

In 2015, Germany was the world's second-largest market (by value) for organic food and beverages after the USA, accounting for 11 per cent of the global organic retail market. In 2015, the value of the German organic retail sales were almost 9 billion Euros, growing by 11 per cent from the previous year. German consumers spent an estimated 106 Euros per capita annually on organic food which makes it the 6th largest per capita spend globally (FiBL, 2017).

Germany is also the second largest global organic dairy market, valued at 1.1 billion Euros in 2016. Organic milk is the largest sector within organic dairy in Germany which grew by 15 per cent to 2016. The organic milk market accounted for 13 per cent of total milk sales in 2015, it is expected to account for almost a quarter of the market by 2020 (OMSCO, 2017).

In 2016, the EU was New Zealand's largest export market for organic produce, valued at NZ$62 million accounting for 24 per cent of total New Zealand organic exports (MPI, 2017b). A share of these exports went to Germany.

Table 3-4: The organic market in Germany, key indicators, 2011 – 2015

	2011	2012	2013	2014	2015
Area, all (ha)	1,015,626	1,034,355	1,044,955	1,047,633	1,088,838
Area, share of total (%)	6.07	6.21	6.26	6.26	6.51
Operators, exporters (n)				439	775
Operators, importers (n)	297	308	300	1,133	1,452
Operators, processors (n)	8,905	9,183	9,146	11,609	14,280
Operators, producers (n)	22,506	23,032	23,271	23,717	25,078
Retail sales, all (Million €)	6,640	6,970	7,420	7,760	8,620
Retail sales, all (€/person)	82.7	86.6	91.8	95.6	105.9

Source: FiBL, 2017.

Germany is dependent on organic imports to meet consumer demand. Between 2000 and 2015, sales of organic food in Germany have more than tripled. However, domestic production did not keep pace with the growing demand, hence the demand is mostly covered by higher imports. Reasons for the higher share of imports are price increases for conventional products, high sale and rental prices for agricultural land, and uncertainty about financial support for organic farming (USDA, 2016a). The main categories of organic imports to Germany are fruits and vegetables, milk and milk alternatives, yoghurt, butter, eggs, pork, and cereals (USDA, 2016).

The organic market in Germany is competitive and fragmented, with no single player having more than a 10 per cent share. The brands of *Artisanal* and *Alnatura* had the largest shares of organic packaged foods and beverages respectively in 2015 (Australian Organic Ltd., 2017).

A major driver for the growth in organic food sales in Germany was the expansion of specialist organic retail shops. Traditional food retail accounts for only half of the organic food sales in Germany, the other half is for organic retail shops and specialty shops like bakeries, butchers, fruit & vegetable stores, open markets or direct sales from the farm. In contrast to the conventional food retail market, the organic food retail scene is diverse. It is estimated that there are over 2,400 organic food retail shops in Germany with organic food chains being mainly regional or only in some cities (USDA, 2016a). The OTA (2016) stresses that although many Germans are familiar with the organic concept, they are not brand loyal or trusting of labelling, which limits the sales of specific brands (OTA, 2016). As organic products are widely available and competition is strong, consumer demand for low-priced, often private-label products is high, with increased sales of home brands (private-labels) (OTA, 2016).

Projections show that the German organic food and beverage market is expected to grow by 1.2 per cent annually by 2020 (Australian Organic Ltd., 2017). However, in the future, Germany's dependence on organic imports will continue as production is not predicted to increase (USDA, 2016).

Standards and requirements for exporters from New Zealand

Organics in Germany are regulated by the EU organic regulations and the EU member states have the authority to determine additional requirements for production within their country. The EU has equivalency arrangements with a number of countries outside the EU, including New Zealand. Hence, New Zealand exports to the EU are covered by the Official Organic Assurance Programme (OOAP). The arrangement with New Zealand covers processed and unprocessed plant and animal products, including seeds for planting, unprocessed wool, and since 2014 the European Commission has recognised New Zealand organic wine production (MPI, 2016).

For countries without an equivalency agreement, the EU requires that imported organic products meet EU standards. Non-EU organic products must include country of origin labelling if they wish to use the EU organic logo. The main objective of the European logo is to make organic products easier to be identified by consumers. The use of the logo and correct labelling is obligatory for all organic pre-packaged food produced within the European Union. Use of the EU organic logo is not required for products from outside the EU (European Commission, 2017).

The EU requires organic certification for all those involved in production and handling, including importers. The European Commission (EC) requires all processing operations to be certified, even if those products are below the 95 per cent threshold for the "Organic" label (OTA, 2016).

Each EU member state accredits certification bodies. Additionally, the EU vests the authority for exchanging information on "infringements and irregularities" (enforcement) to certifiers through the member state control systems as the vehicle to remove non-compliant product from the marketplace. However, it is not clear how, or when, an organic certificate can or will be revoked (OTA, 2016).

3.6 France

In 2015, there were 1.3 million hectares of organic farmland in France which increased by 19 per cent from 2014. The share of organic land to total agricultural land was 5 per cent in 2015, as shown in Table 3-5. In 2015, there were a total of 40,999 organic operators in France, including importers, processors and producers which was an increase of 8 per cent from the previous year.

France is the third largest market for organic food and beverages (by value) globally, accounting for 7 per cent of the organic retail market (by value) worldwide (FiBL, 2017). In 2015, retail sales of organic products were 5.5 billion Euros (see Table 3-5) which grew by 15 per cent from the previous year. In 2015, French consumers spent 83 Euros per capita on organic food which is the 8th largest spending per capita in the world. The table shows that organic imports are higher than organic exports which indicates that France imports organic products to meet consumer demand. The organic market for food and beverages is projected to grow in the future (OTA, 2016).

The French organic dairy market is amongst the largest in the world and is growing strongly. In 2015, the French organic dairy market was valued at 711 million Euros, with an increase of 9 per cent in 2015 (OMSCO, 2017). In that sector, organic milk accounted for half of organic dairy purchases, valued at 282 million Euros, representing 11 per cent of total milk sales in France in 2015. In contrast, the organic cheese market is relatively small; in 2015 it accounted for only 1 per cent of total cheese sales (OMSCO, 2017).

In 2016, the EU was New Zealand's largest export market for organic produce, valued at NZ$62 million, accounting for 24 per cent of total New Zealand organic exports (MPI, 2017b). A share of these exports went to France.

Table 3-5: The organic market in France, key indicators, 2011 – 2015

	2011	2012	2013	2014	2015
Area, all (ha)	975,141	1,032,941	1,060,756	1,118,845	1,375,328
Area, share of total (%)	3.55	3.76	3.86	4.08	5.01
Exports, all (Million €)			393	435	435
Imports, all (Million €)		670	720	720	720
Operators, importers (n)	179	137	181	148	273
Operators, processors (n)	8,785	8,957	9,297	11,198	11,842
Operators, producers (n)	23,135	24,425	25,467	26,466	28,884
Retail sales, all (Million €)	3,764	4,020	4,383	4,830	5,534
Retail sales, all (€/person)	59.67	61	68.51	73.36	83.32

Source: FiBL, 2017.

Standards and requirements for exporters from New Zealand

Similar to Germany and the UK, organics in France are regulated by the EU organics specific regulations. As mentioned above, the EU has an equivalency arrangement with New Zealand. Hence, New Zealand exports to the EU are covered by the Official Organic Assurance Programme (OOAP). The arrangement with New Zealand covers processed and unprocessed plant and animal products, including seeds for planting, unprocessed wool and wine (MPI, 2016). For more detail, see section 3.5.

3.7 United Kingdom

In 2015, there were 495,929 hectares of organic farmland in the United Kingdom (UK) which dropped by 6 per cent from 2014. The share of organic land to total agricultural land was 3 per cent in 2015, as shown in Table 3-6. In 2015, there were 6,059 organic operators (processors and producers) in the UK which was a small increase of 1 per cent from the previous year. The overall increase is due to a slight growth in the number of organic processors between 2014 and 2015 while the number of organic producers dropped slightly. Despite the decrease in land area, production and producers, there was growth in the organic market in the UK. In 2015, the UK was the world's sixth largest market (by value) for organic food and beverages, accounting for 4 per cent of the organic retail market (by value) worldwide. Retail sales of organic food and beverages were almost 2.6 billion Euros in 2015, growing by 16 per cent from the previous year. The per capita spend on organic products was estimated to be 40 Euros in 2015, representing the 14th largest spending per capita in the world (FiBL, 2017).

As previously stated, the EU was New Zealand's largest export market for organic produce in 2016 with organic exports valued at NZ$62 million, accounting for 24 per cent of total New Zealand organic exports (MPI, 2017b). A share of these exports went to the UK.

Table 3-6: The organic market in the United Kingdom, key indicators, 2011 – 2015

	2011	2012	2013	2014	2015
Area, all (ha)	638,528	590,009	558,718	521,475	495,929
Area, share of total (%)	3.72	3.43	3.25	3.03	2.88
Operators, processors	2,479	2,369	2,332	2,487	2,625
Operators, producers	4,650	4,281	3,918	3,526	3,434
Retail sales, all (Million €)	1,903	1,950	2,037.19	2,240.98	2,603.87
Retail sales, all (€/person)	30	32	32.95	34.82	40.23

Source: FiBL, 2017.

The Soil Association's 2016 Organic Market Report stated that organic products have 1.4 per cent market share of the total UK food and beverage market (Soil Association, 2016). Between 2015 and 2016 sales of organic food and beverages grew by 7 per cent (OMSCO, 2017). In 2015, the biggest product categories by sales were dairy (26.6 per cent), fresh fruit and vegetables (22.2 per cent), canned and packaged groceries (15 per cent), baby food (10 per cent), red meat (5.4 per cent), poultry (4.5 per cent), and eggs (3.8 per cent) (Soil Association Organic Ltd., 2016). In 2015, supermarkets accounted for the largest share (69 per cent) of total organic sales which grew by 3.2 per cent in 2015. Over 8,000 shops in the UK sell organic products and 1.5 per cent of all food and beverages sold through supermarkets is organic. The large supermarkets are: Sainsbury's, Tesco, Waitrose and Ocado (online supermarket). In 2015, there was an increase in the use of independent retailers for organic sales (+ 7.5 per cent). Box schemes and online sales of organic products have risen by 9.1 per cent. The organic catering sector has increased by 15.2 per cent. Hence, a shift in consumer shopping habits, moving towards independent retailers can be observed (Soil Association, 2016; Australian Organic Ltd, 2017).

The UK market for organic products is projected to grow by 1.2 per cent in 2017, and a slow annual growth rate of 1.1 per cent for the period 2017 to 2020 is expected (Australian Organic Ltd., 2017).

Standards and requirements for exporters from New Zealand

Similar to Germany and France, organics in the UK are regulated by the EU organics specific regulations. As mentioned above, the EU has an equivalency agreement with New Zealand. Hence, New Zealand exports to the EU are covered by the Official Organic Assurance Programme (OOAP) (MPI, 2016). For more detail, see section 3.5. Trade of organic products with the UK may, however, change in the future. When Brexit comes into force, trade deals with New Zealand would have to be re-negotiated.

3.8 Japan

In 2015, the total area of Japanese organic production was 10,043 hectares, representing 0.22 per cent of total agricultural land area, as shown in Table 3-7. Land area for organic production in Japan has remained stable in recent years with minor fluctuations. In 2015, there were

3,935 organic operators in Japan, comprising 2,130 producers and 1,805 processors (FiBL, 2017).

In 2015, total organic retail sales reached 999.7 million Euros in Japan, with Japanese consumers spending an estimated 7.83 Euros per capita on organics annually (FIBL, 2017). While growth in organic sales has been comparatively slower to the rest of Asia (OTA, 2017c), overall organic consumption grew 43 per cent between 2015 and 2016, with pesticide-free and reduced chemical fertiliser food products also growing (43 per cent) (Willer & Lernoud, 2017).

In 2016, New Zealand's organic exports to Japan were valued at NZ$23 million, representing 9 per cent of total New Zealand organic exports (MPI, 2017b). This is partially due to Japan's being New Zealand's largest export market for organic kiwifruit (Zespri, 2017). There were approximately 193 organic importers in Japan in 2015 (FiBL, 2017).

Table 3-7: The organic market in Japan, key indicators, 2011 – 2015

	2011	2012	2013	2014	2015
Area, all (ha)	9,401	10,611	9,889	9,937	10,043
Area, share of total (%)	0.24	0.27	0.25	0.22	0.22
Operators, importers (n)	151	193	193	193	193
Operators, processors (n)	1,788	1,805	1,805	1,805	1,805
Operators, producers (n)	3,994	2,130	2,130	2,130	2,130
Retail sales, all (million €)	999.70	999.70	999.70	999.70	999.70
Retail sales, all (€/ person)	7.83	7.83	7.83	7.83	7.83

Source: FiBL, 2017.

There has been growth in organic bread and organic green tea, (which was 56 per cent of sales of organic beverages in 2014) (OTA, 2017c).

However, organic consumption is relatively low. It has been suggested that possible barriers to higher consumption of organic food and beverages in Japan include a prevalent consumer preference to limit spending and a perception that organic products are premium, as well as the limited scale of domestic agricultural production in Japan (particularly organic) and a perception that achieving Japanese organic certification is difficult (Australian Organic Ltd., 2017). This is further compounded by the organic food and beverage business environment of Japan, which is highly competitive and fragmented. Major Japanese food manufacturers tend to sell standard products to the mass market, with smaller manufacturers focused on selling niche organic products to a smaller set of affluent, health-conscious consumers (OTA, 2017c).

While the organic food and beverages market in Japan is relatively small, the Japanese market for natural food and beverages is estimated to be worth approximately US$6 billion. The differences in relative size of the natural and organic food and beverage markets in Japan may be explained by a lack of consumer understanding of organic concepts. While 97 per cent of Japanese consumers are aware of the term 'organic', only 5 per cent of consumers have been able to accurately identify its meaning. A lack of easily accessible and widespread organic retailers, as well as the fragmented nature of food and beverage retail (i.e. a lack of "one-stop"

food and beverage retailers) in Japan have also been identified as barriers to higher organic consumption (USDA FAS, 2013).

Indicating a growing interest in organic food and beverages, the first annual Organic Lifestyle Expo was hosted in Tokyo in 2016, with over 190 exhibitors (including organic food operators) presenting to almost 20,000 visitors over a two-day timespan. Other interest in organics has included the city of Kisarazu's (Chiba prefecture) announcement as the first organic city in Japan, implementing a 10-year plan to increase organic food production and establish an organic brand, as well as the establishment of an official "Organic Day" (December 8th) by the Organic Movement Alliance (OMA) (Willer & Lernoud, 2017).

More information regarding Japanese consumer trends, particularly in relation to perceptions of and preferences for organic food and beverages, can be found in Chapter 4 of this report.

Standards and requirements for exporters from New Zealand

Organic standards for Japan are governed by the Ministry of Agriculture, Forestry and Fisheries (MAFF). New Zealand is, as of January 2015, one of seven countries (including the US, Argentina, Australia, Canada, Switzerland, New Zealand and member states of the EU) with an organic certification system regarded to have organic equivalence with the Japanese Organic JAS System (MAFF, 2015).

However, this organic equivalency agreement only applies to plant and processed plant products. New Zealand exporters of organic plant and processed plant products seeking to access the Japanese market are required to certify their products with MPI via the OOAP. Exporters may also access the Japanese market via a certification body registered with MAFF, as well as via a private certification scheme (not available for all products) (OEANZ, 2016).

3.9 Republic of Korea

The organic market in Korea is small but growing. Table 3-8 shows the key indicators for the Korean organic market between 2011 and 2015. In 2015, there were 18,136 hectares under organic management which represented 1 per cent of total agricultural land in Korea. In the same year, there were 11,611 organic operators which decreased slightly from the previous year. Despite organic land and operators decreasing between 2014 and 2015, retail sales grew by almost 30 per cent in the same period. These were valued 280 million Euros, making Korea the 17th largest organic market in the world (by value). Per capita spending on organic food in 2015 was 5.58 Euros, ranking Koreans as the 24th largest spenders in the world (FiBL, 2017). The OTA (2016) stated that the increase in sales of organic food and beverages is mainly driven by increasing consumer health consciousness and the tendency of consumers to spend more on healthy products for their children, notably organic baby food, fresh milk, and cheese. Organic baby food has become typical for baby food in Korea (OTA, 2016).

The table further shows that imports to Korea were 23 million Euros in 2015 (FiBL, 2017). New Zealand's organic exports to Korea were valued NZ$20 million in 2016, accounting for 8 per cent of total New Zealand organic exports (MPI, 2017b).

Organic food and beverages are premium-priced in Korea, and many brands are sold exclusively through high-end retailers such as department stores and premium health food stores. In Korea, the largest company by organic sales is *Maeil Dairies Co Ltd* which accounted for over 40 per cent of sales in 2015. *Maeil Dairies* is followed by *National Agricultural Cooperative Federation* and *Namyang Dairy Products Co Ltd* (organic beverages). Local Korean companies are expected to continue to dominate the organic food and beverage market.

Table 3-8: The organic market in the Republic of Korea, key indicators, 2011 – 2015

	2011	2012	2013	2014	2015
Area, all (ha)	19,312	25,467	21,210	18,306	18,136
Area, share of total (%)	1.04	1.37	1.14	1.05	1.04
Import, all (Million €)		46.58	46.58	40.7	22.95
Operators, producers (n)	13,376	16,733	13,963	11,633	11,611
Retail sales, all (Million €)				220.92	280.77
Retail sales, all (€/person)		8.9		4.41	5.58

Source: FiBL, 2017.

Projections expect an increase in sales of 2.6 per cent in 2017 with an annual growth rate of 2.1 per cent for the period 2017 - 2020. However, higher growth is anticipated for organic baby food (OTA, 2016; Australian Organic Ltd., 2017).

Standards and requirements for exporters from New Zealand

Korea has its own organic regulatory standard and requires an official government mark of certification by the exporting country. It does not recognise any New Zealand organic standard. In contrast, Korea does recognise organic products from the US, Japan and the EU. New Zealand organic products destined for Korea must be certified directly to the Korean standard which is mostly issued by the New Zealand accreditor *Doalnara* in Korea.

The New Zealand Organic Exporters Association (OEANZ, 2017b) stated that access to the Korean Market has remained difficult and expensive for New Zealand organic exporters. The additional annual cost of New Zealand organic exporters to gain trade access and Korean certification is estimated at approximately $100,000. Current New Zealand organic imports to Korea include dairy ingredients, kiwifruit, honey, soft drinks, yoghurt powder, wet baby food, skincare oils & wine (OEANZ, 2017b).

MPI submitted an application to the Korean authorities for an equivalence determination of the OOAP Standards and Technical Rules. Korea has indicated that they are planning for a full bilateral equivalence agreement. However, the planned agreement would only cover processed products (including wine). Hence, it would exclude fresh fruit and vegetables and honey. This means that New Zealand exporters will be unable to achive organic certification for honey under the Korean regulations. However, exporters can use an overseas organic

certified label. Under the new Korean regulations ingredients and manufacturing processes also need to be certified as organic (OEANZ, 2017b).

In March 2016, the Korean government implemented the 4th Five Year Environmentally-friendly Promotion Act (Years 2016 – 2020). This new Act on the Management and Support for the Promotion of Eco-Friendly Agriculture/Fisheries and Organic Foods consolidates Korea's organic regulations, and is sometimes referred to as the New Organic Regulations. The new action plans targets (among others) the growth and establishment of an environmentally-friendly agricultural system. This also establishes a direct payment system, emphasising the environmental benefits of organic agriculture (Willer & Lernoud, 2017).

Also since 2016, the voluntary collection of the promotion of organic agriculture from the organic community became mandatory for all certified organic farmers. A managing board has been set up for the operation of the funds which will be used for the promotion of sales of organic agricultural products and for increasing organic farmers income. About US$4.5 milllion are expected to be generated annually (Willer & Lernoud, 2017).

From 2017, the organic certification, which was established by both the government and private certification bodies, will be delegated to the private sector. Hence, organic certification work will be handled by the 65 certification bodies that are currently existing. Howver, the government will continue to handle registration and management of these private certification bodies (Willer & Lernoud, 2017).

3.10 Conclusion

Globally, the organic market is growing and is projected to grow further in the future. New Zealand is heavily dependent on its agricultural exports, and in 2015 almost 1 per cent of its exports were organic products.

Eight overseas markets with projected growth in the organic food and beverages sector were identified with potential for increased organic exports from New Zealand. These were the USA, China, Australia, United Kingdom, Germany, France, Japan and the Republic of Korea (formerly South Korea).

For each country, import standards for organic products from New Zealand were reviewed. Similar to New Zealand, Australia has no mandatory requirement for certification of organic product sold domestically. However, foods imported to Australia, must be labelled in accordance with the Food Standards Code developed by Food Standards Australia New Zealand (FSANZ). With some other countries New Zealand has signed an equivalency agreement through the Official Organic Assurance programme (OOAP) which facilitates the export of organic products, this includes Japan and the EU. For the US, New Zealand's OOAP has been acknowledged by the USDA and AsureQuality and/or BioGro organic standards are recognised to be certifiable under their US National Organic Program (NOP). However, for organic exports to the US, New Zealand exporters are required to comply with two sets of technical rules for organic production and processing - the OOAP Technical Rules of

Production and the NOP standards For China, New Zealand is the first country to sign a mutual recognition arrangement for organic certification due to come into effect in mid-2017. With regards to Korea, MPI submitted an application to the Korean authorities for an equivalence determination of the OOAP Standards and Technical Rules. Korea has indicated to aim for a full bilateral equivalence agreement with New Zealand. The planned agreement however, would only cover processed products (including wine). Until then organic exports need to be certified directly to the Korea standard which is mostly issued by the New Zealand accreditor *Doalnara* in Korea.

Chapter 4
Consumer attitudes towards organic food and beverages

4.1 Consumer attitudes towards organics

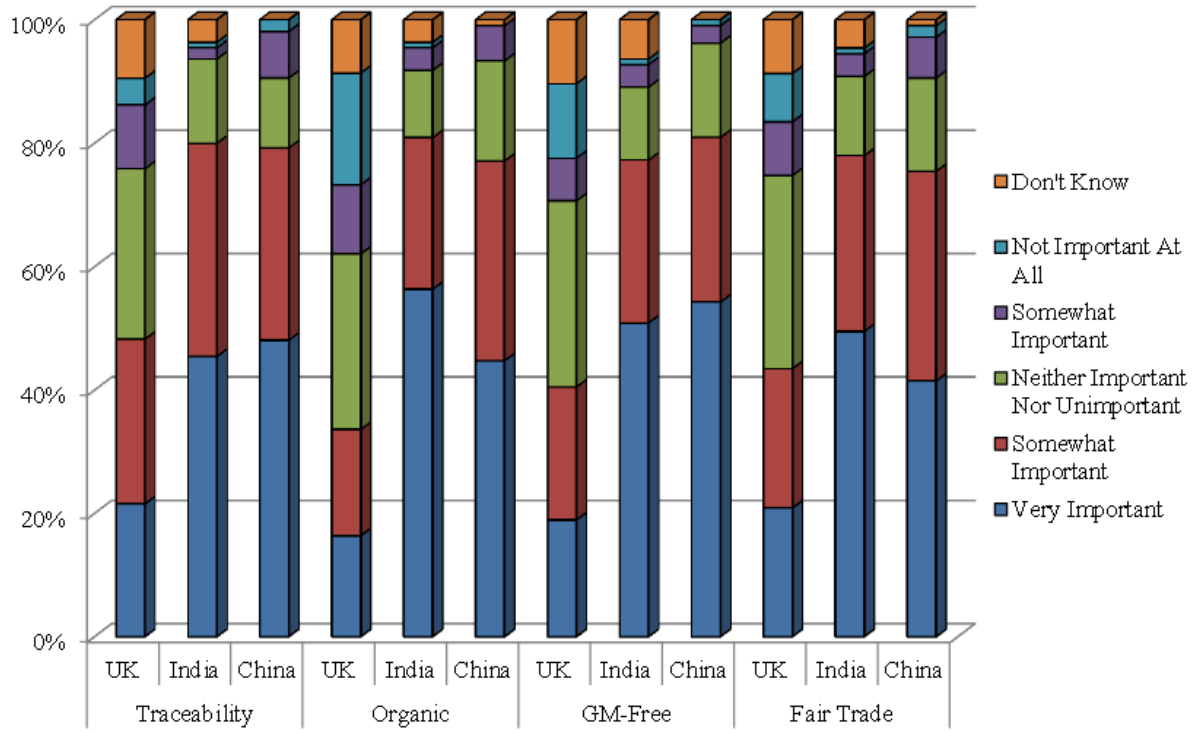
The following chapter provides an overview of literature examining consumer preferences and willingness-to-pay (WTP) for organic products. The literature review focuses on three major world regions with strong markets for organic food products – North America, Europe and Asia – to provide an indication of current consumer trends in relation to organics.

This chapter is structured as follows. Firstly, consumer perceptions of and preferences for organic food and beverages are explored across three regions (North America, Europe and Asia), followed by literature examining consumer preferences for organic labels and certification. Secondly, literature examining consumer WTP for organic products is explored across the same three regions above, followed by studies specifically examining WTP for organic-labelled and –certified products.

This project is underpinned by previous work undertaken by the Agribusiness and Economics Research Unit (AERU). This work has included assessments of consumer preferences and willingness to pay (WTP) for different attributes (particularly credence attributes) of food products from New Zealand (Saunders et al., 2013; Saunders et al., 2015; Guenther et al., 2015).

In an initial study examining consumer preferences for credence attributes in China, India and the UK, Saunders et al. (2013) examined consumers' attitudes towards ethical, environmental and other attributes in New Zealand food products. These attributes included: Recyclable/re-usable packaging; Certified for animal welfare standards; Certified for environmental quality standards; Organic; and Fair Trade. The results showed that organic was the lowest rated of all attributes in the UK, with only 16 per cent of respondents indicating it is *very important* in a food product, and two thirds of respondents not thinking of it as *important*. In contrast, 56 per cent of Indian and 45 per cent of Chinese participants stated that organic was *very important* in a New Zealand food product (Saunders et al., 2013).

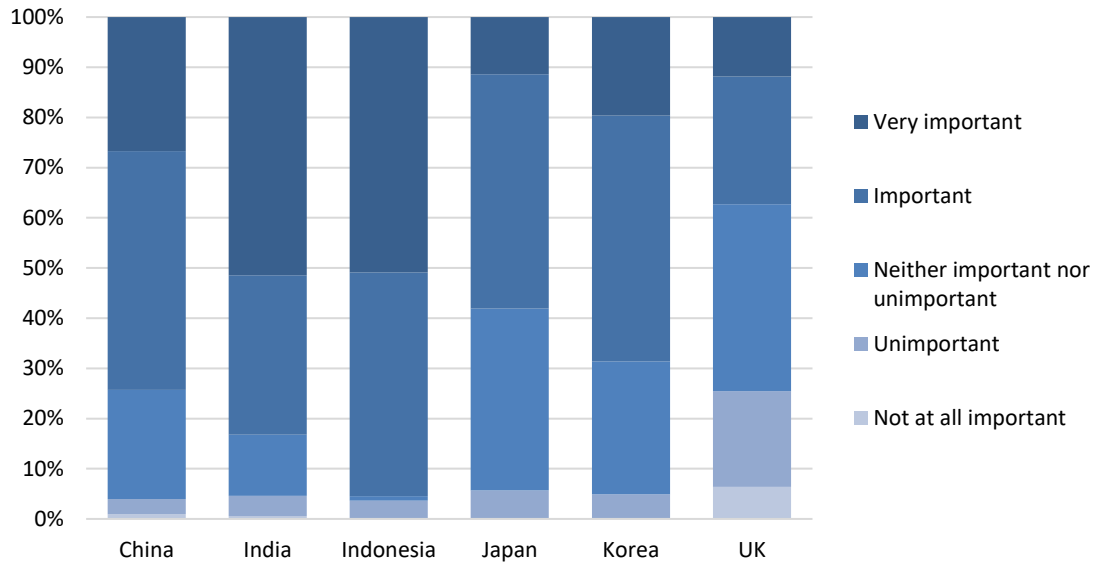
Figure 4-1: Consumer attitudes towards organic attribute in food products



Source: Saunders et al., 2013.

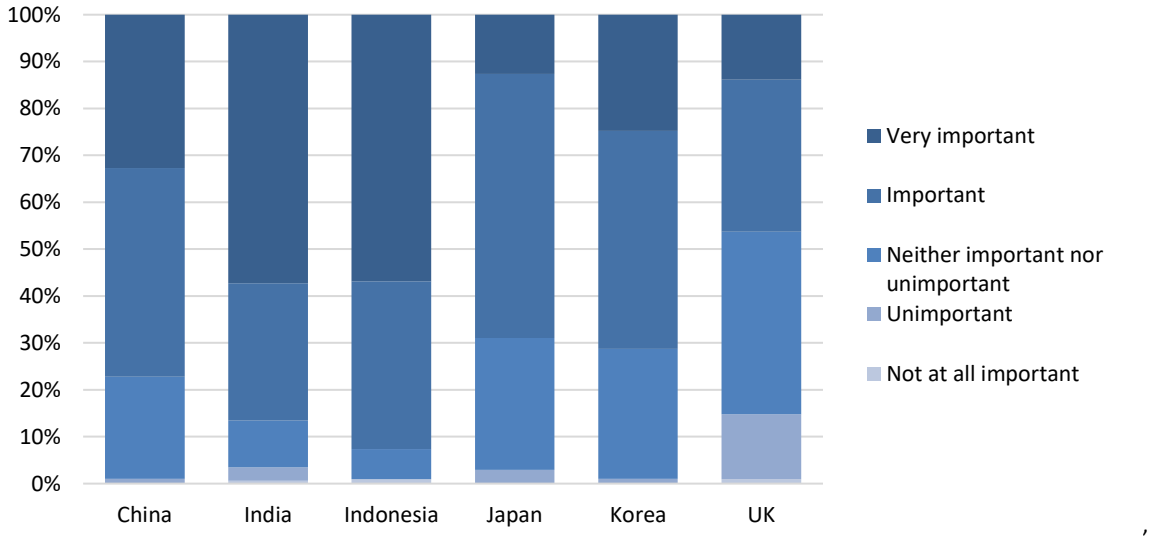
In their study, Saunders et al. (2015) examined consumer preferences for credence attributes in food products. This included a survey of approximately 100 participants in six key international markets (China, India, Indonesia, Japan, South Korea and the UK). While organics were not a primary focus of this study, the survey asked participants to consider the importance of organic production in relation to food safety and environmental quality. As shown by Figure 4-2, in relation to food safety, the importance of organic production received mixed responses. The highest importance placed on organic production was indicated by participants in the developing countries with Indonesia (51 per cent very important, 45 per cent important), India (51 per cent very important, 32 per cent important) and China (27 per cent very important, 48 per cent important). Conversely, low importance was placed on organic production for food safety amongst UK participants, with 19 per cent stating that this was unimportant and 37 per cent stating that this was neither important nor unimportant. In addition, as shown by Figure 4-3 below, organic production as a factor affecting environmental quality was considered particularly important to participants in developing countries. Indonesian participants indicated a high rating of the importance of this factor, with 56 per cent of participants considering this to be very important and a further 35 per cent stating that this was important. This was followed by responses from Indian (57 per cent very important, 29 per cent important) and Chinese respondents (33 per cent very important, 48 per cent important). Interestingly, the UK showed the lowest overall rating of all countries, with only 13 per cent stating that this was very important and 9 per cent stating that this was unimportant (Saunders et al., 2015).

Figure 4-2: Consumer attitudes towards organic production in relation to food safety



Source: Saunders et al., 2015.

Figure 4-3: Consumer attitudes towards organic production in relation to environmental quality

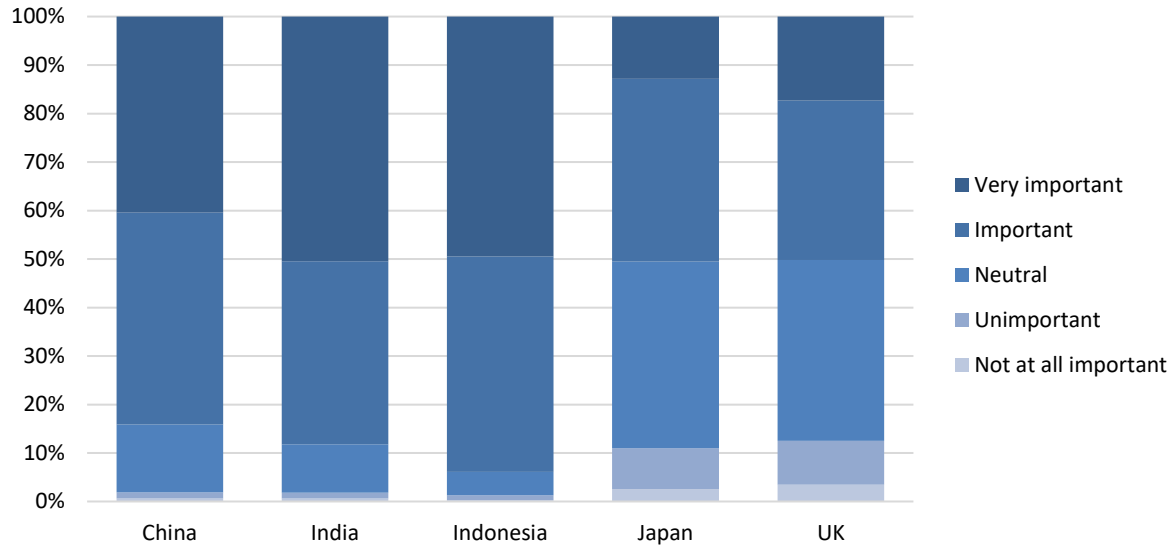


Source: Saunders et al., 2015.

The above study was later followed up by a large-scale survey including approximately 1,000 consumers in China, India, Indonesia, Japan and the UK. As with previous work, the focus of this study (Guenther et al., 2015) was to explore consumer preferences towards selected key credence attributes in food and beveragse. While organics were also not a primary focus of this study, the survey asked participants to again consider the importance of organic production in relation to environmental condition. As shown in Figure 4-4 below, organic production in relation to environmental condition was shown to be important to participants

from India (50 per cent *very important*) and Indonesia (49 per cent *very important*) compared to only 13 per cent of Japanese and 17 per cent of UK respondents that rated this factor *very important* (Guenther et al., 2015).

Figure 4-4: Consumer attitudes towards organic production in relation to environmental condition



Source: Guenther et al., 2015

Previous literature reviews on trends in consumer preferences for organic food and beverage products exist. Hemmerling et al. (2015) examined literature published between January 2000 and December 2011 on consumer behaviour in relation to organic food. The authors found that most studies had been focused on the cost of organic food products to the consumer, as well as consumer value and benefits of organic foods. The authors also identified multiple gaps in the literature, including a lack of studies examining themes such as ecological packaging, consumer price knowledge and price processing, as well as communication and information needs and convenience and distribution (Hemmerling et al., 2015).

Rödiger & Hamm (2015) conducted a literature review examining the effects of product price on consumer behaviour in relation to organic food products, finding that most studies were focussed on calculating WTP for organic food products, with mixed results observed across the literature.

Aertsens et al. (2009) conducted a literature review to determine the most prominent determinants of organic food consumption. The authors found organic food consumption internationally to be based on personal values held by consumers, with health as the strongest motivating factor, followed by perceptions of better taste, protection of the environment and higher animal welfare credentials (Aertsens et al., 2009).

North America

A number of studies have examined North American markets with regards to consumer perceptions of and preferences for organic food and beverages. These have been largely focused on the US.

Perceptions and preferences

Bellows et al. (2010) examined the effect of gender on US consumer preferences for organic, local, US-grown and GM-free foods. For all attributes examined, the 'organically produced' attributed was rated as the least important, with female participants signalling generally higher importance in relation to all attributes than male participants. In particular, of the 26 attributes examined, 'organically produced' was ranked as the 25th most important attribute overall (Bellows et al, 2010).

Cahill et al. (2010) conducted an analysis of North American newspaper articles to explore how organic agriculture was discussed in North American media. The study found references to the themes of human health (81 per cent of articles), food safety (50 per cent of articles) and environmental concerns (90 per cent). Of all article topics, organic labelling and standards appeared the least frequently (1 and 0.3 per cent, respectively) (Cahill et al. 2010).

Onyango et al. (2007) examined US consumer attitudes to and likeliness to purchase organic food products. The study found that a product's naturalness, vegetarian/vegan status as well as the location of production were the most important determinants of regular organic food purchasing behaviour (Onyango et al, 2007).

Europe

A number of studies have also examined European markets with regards to consumer perceptions of and preferences for organic food and beverages.

Perceptions and preferences

The provision of locally-grown food as 'organic' has been indicated as a strong purchase motivator for UK consumers, and an attribute that influenced their decision to shop at the farmers' market (Spiller, 2012). Garcia et al. (2010) evaluated supermarket loyal card data of 1.2 million UK supermarket shoppers and conducted focus groups to assess the use of labels in purchase decisions. Their study revealed that consumers purchased organic products for reasons other than concern for the environment, such as health (no pesticide use) and as an extension of a healthy lifestyle (Garcia et al., 2010).

Similarly, Michaelidou & Hassan (2007) examined determinants of UK consumer attitudes towards organic food. The study found that consumers' levels of health consciousness, ethical self-identity and food safety concerns positively affected their attitude towards organic food products, with only ethical self-identity specifically affecting intention to purchase organic

foods. However, in a general sense, attitudes towards organic food products were found to positively influence UK consumer purchase intentions (Michaelidou & Hassan, 2007).

Kriwy & Mecking (2011) examined German consumer preferences for organic food products, finding that health- and environmental-consciousness, as well as demographic factors affected organic food consumption.

Aertsens et al. (2011) examined the effect of Belgian consumers' level of knowledge of organics on their intentions to consume organic food products. Not surprisingly, the study found that higher levels of both objective and subjective knowledge of organics led to higher consumption of organic food products. Other factors which were shown to have a positive influence on organic food consumption included perceptions that these products were better for the environment, healthier, better quality and taste, and were produced without the use of pesticides (Aertsens et al., 2011).

Using purchasing data from the years 2005 to 2007, Andersen & Lund (2014) examined Danish organic food consumption patterns, segmenting consumers into six distinct groups – 'convinced' ("very involved in organics and the world around them"), 'positive and food involved' ("positive towards organics, but values food quality above organic production"), 'positive and convenient' ("not interested in food and cooking, but interested in organics"), 'product focused' ("do not associate organics with quality"), 'indifferent' ("rarely buy organic products") and 'sceptics' ("negative towards the concepts of organic production"). The study found that the 'convinced' group apportioned 13 per cent of their total budget to organic products in 2005, and 18 per cent of their total budget to organics in 2007, with the 'sceptics' group apportioning only 3 per cent of their total budget to organics in both 2005 and 2007 (Andersen & Lund, 2014).

Similarly, Gotze et al. (2016) analysed Swiss household data to determine products characteristics of importance to Swiss organic consumers. The study found a preference among Swiss consumers for unprocessed over processed organic food products (i.e. naturalness), as well as a preference for lower price premiums and locally produced products (Gotze et al., 2016).

De Magistris & Gracia (2008) examined Italian consumer decisions to purchase organic food products, finding health and environmental concern, as well as the consumer's level of knowledge regarding organics, to be key determinants of a positive attitude towards organic foods. Furthermore, it was found that attitudes towards organic foods were the key determinants of organic food purchase. Consumers who believe organic food products to be healthier and of higher quality, as well as those with higher environmental concerns, were more likely to purchase organic food products (de Magistris & Gracia, 2008).

Zakowska-Biemans (2011) examined Polish consumer perceptions of organic foods, finding that consumers associated organic foods with a perception of healthiness and food safety, with a lack of knowledge (including an inability to recognise and find where to buy organic food products) seen as a key barrier to organic food purchase. In addition, a majority of

participants across all identified consumer clusters did not buy organic food (Zakowska-Biemans, 2011).

Nasir & Karakaya (2014) examined consumer attitudes towards organic foods in a European city, outlining the characteristics of three distinct consumer clusters – 'favourable' ("consumers who hold favourable attitudes towards organic foods", 'neutral' ("consumers who have neutral attitudes toward organic foods") and 'unfavourable' ("consumers who have negative attitudes toward organic foods"). The study found that the consumers who are most likely to be favourable towards organic foods are also most likely to pay closer attention to marketing message outlining the healthiness of the products, as well as social responsibility of producers over the environmental friendliness of production (Nasir & Karakaya, 2014).

Labelling and certification

Some studies have also specifically examined European consumer attitudes to and preferences for organic labelling and certification in relation to food and beverage products. Gerrard et al. (2013) examined UK consumer attitudes to certified organic food products, specifically Soil Association, Organic Farmers and Growers and EU labels, as well as a generic organic claim with no logo. The study found that UK consumers placed the highest trust in the Soil Association label (75 per cent), followed by Organic Farmers and Growers (59 per cent), no logo (29 per cent) and EU label (14 per cent). Similarly, participants associated the highest credibility with the Soil Assocation label (78 per cent), followed by Organic Farmers and Growers (67 per cent), no logo (27 per cent) and the EU label (22 per cent). In addition, participants considered the Soil Association label to have above average standards (71 per cent) and stricter than average inspection systems (65 per cent), followed by Organic Farmers and Growers (56 and 48 per cent respectively), EU label (14 per cent for both) and no logo (10 and 8 per cent respectively) (Gerrard et al., 2013).

Von Meyer-Hofer et al. (2015) examined European consumers (Germany, UK, Spain and the Czech Republic) attitudes and perceptions to organic food, specifically which criteria they expected the EU organic label to provide. Across all countries, participants expected the EU organic label to provide included 'no chemical residues', 'no mineral fertilisers' and 'naturalness'. There also existed some differences between countries, with criteria which appeared in some countries' top ten not appearing in others (Von Meyer-Hofer et al., 2015).

Zander et al. (2015) examined consumers in six European countries (Estonia, France, Germany, Italy, Poland and the UK) to determine their attitudes towards and perceptions of the EU organic logo. The study found that general knowledge of the EU organic logo was low, with an average of 25 per cent of participants across all countries acknowledging having seen the EU organic logo previously. Of the sample, approximately 34 per cent of participants were regular organic consumers, with 52 per cent occasionally purchasing organic products and the remaining 15 per cent never purchasing organic products. Of the key motivating factors for the consumption of organic products, 'natural products' was the most important (54 per cent), followed by personal health (53 per cent) and low level of residues (48.0 per cent). Other motivating factors included animal welfare (25 per cent), better taste (16 per cent), environmental protection (33 per cent) and GMO free (44 per cent) (Zander et al., 2015).

Asia

A number of studies have also examined Asian markets with regards to consumer perceptions of and preferences for organic food and beverages.

Perceptions and preferences

Xie et al. (2015) examined Chinese consumer preferences for organic foods, particularly their purchase intention. The study found that a perception of organic foods being healthier and safer were the main determinants of organic food purchase. In contrast, high prices, low availability and a lack of knowledge were the main barriers to purchase organics (Xie et al., 2015).

Chen (2009) assessed Taiwanese consumer attitudes to organic foods, finding health and environmental concerns to be key motivating factors in purchasing organic food products. Tung et al. (2015) also examined Taiwanese consumer attitudes to organic foods, finding that vegetarianism, demographic factors (such as having children or elderly family in the household) and a preference for healthier food products were key determinants of organic food consumption.

Similarly, Hsu et al. (2016) examined Taiwanese consumer preferences for organic food products, specifically examining the influence of several factors (natural content, food safety, health consciousness, and knowledge of organics) on purchase intentions. The study found that consumers' level of subjective knowledge of organics had the highest influence on both their opinions and purchase intention in relation to organic food, with health consciousness also impacting highly on organic food purchase intention. Other important factors included the naturalness of organic food products, which had a positive influence on consumer attitudes towards organic food (Hsu et al., 2016).

Liang (2016) also examined Taiwanese consumer perceptions of and purchase intentions for organic food products using an organic food purchase model. The study found that consumers associated these products with higher nutritional value and environmental friendliness, with the extent to which consumers believed this increasing the likelihood of positive attitudes towards organic food products. In addition, trust and attitude to organics were the most significant determinants of organic purchase intention (Liang, 2016).

Sondhi (2013) assessed the preferences of urban Indian consumers towards organic food products. Results showed that consumers who were favourable towards organic food products. The main determinants of organic food consumption included health, food safety and environmental concerns. The study also found that participants exhibited a high awareness of organic food, with 84.6 per cent citing high prices and 48.2 per cent citing unavailability as main reasons for infrequently purchasing organic food products (Sondhi, 2013).

Chakrabarti (2010) examined Indian food experts on their views on organic food consumption in the general public. These experts stated that Indian consumers were most motivated to consume organic food due to a perception that organic food is better for their health, as well as the exclusion of pesticides, chemical fertilisers, artificial preservatives, or genetically modified organisms (GMO) in production. In terms of awareness of organic foods, 64 per cent of experts believed that consumer awareness of the organic category was due to the health and nutritional aspects of organic food, while only 21 per cent of experts felt that it stemmed from friendliness to the environment (Chakrabarti, 2010).

Similarly, Finzer et al. (2013) carried out interviews and surveys on organic fruit and vegetable consumption preferences and behaviours in India (South Delhi). The study found that, of all households, approximately 41 per cent were aware of organic fruit and vegetables, 62 per cent of which indicated that they would be willing to pay a premium for organic produce. The main motivating factors for this was for health reasons, as well as a lack of pesticide use in production (Finzer et al., 2013).

Kurnia et al. (2013) assessed Indonesian consumer preferences for organic foods. Their study showed that while almost half of the respondents had historically purchased organic goods, the remainder did not regularly purchase organic food products due to low affordability (18 per cent), scepticism about the authenticity of organic claims (10 per cent), a lack of availability (11 per cent), and the perception of a subpar product appearance (23 per cent) (Kurnia et al., 2013). Similarly, Wahida et al. (2013) examined Indonesian consumer preferences for organic foods, showing that two-thirds of participants had heard of organic food products. In addition, the majority of participants (90-95 per cent) indicated a perception that that organic foods were healthier and more environmentally friendly than conventionally-produced foods (Wahida et al., 2013).

Truong et al. (2012) examined Vietnamese consumers' perceptions of organic foods, finding health, food safety and superior quality to be key determinants of these consumers' willingness to purchase organic foods. In addition, female participants also rated the nutritional value of organic foods as a significant determinant of purchase. Conversely to the above studies, environmental concerns showed no influence on purchasing decisions for organic food products (Truong et al., 2012).

Labelling and certification

Some studies have also specifically examined Asian consumer attitudes to and preferences for organic labelling and certification in relation to food and beverage products. McCarthy et al. (2016) examined middle class Chinese consumers' adoption of certified organic and "green" food products. The study found that the purchase of certified organic and "green" foods is associated with demographic factors (such as income, age, gender, etc), as well as a perception that certified organic food is healthier for their family, and an aversion to products which include genetically modified (GM) ingredients. However, there is also some confusion among Chinese consumers as to the clarity of the definitions of "green", partially organic and certified organic food products, which may present a barrier to the purchase of certified organic products (McCarthy et al., 2016).

As mentioned above, Liang (2016) examined Taiwanese consumer perceptions of and purchase intentions for organic food products using an organic food purchase model. The study found that trust and attitude were the most significant contributors to consumer purchase intention for organic foods, with trust being influenced by the presence of an organic label and/or certification (Liang, 2016).

Similarly, Tung et al. (2012) examined Taiwanese consumer perceptions in relation to their purchasing intention for organic food products. Results reveraled a concern for the levels of pesticides used in agriculture but a lack of trust in organic foods. The authors suggest that, while high prices are a barrier to organic food consumption in Taiwan, the use of organic certification could be useful in bridging attitudinal inconsistencies for Taiwanese consumers (Tung et al., 2012).

As mentioned above, Wahida et al. (2013) examined Indonesian consumer preferences for organic food products, finding that 65 per cent of respondents preferred to purchase products with organic certification, with 60 per cent preferring government certification (despite the current lack of food certification standardisation).

To conclude, the above studies provide insight into consumer perceptions of and preferences for organic food and beverage products. In summary, while consumer perceptions and preferences vary across countries, common themes remain. Table 4-1 summarises the key consumer perceptions of and preferences for organic food and beverages across the literature examined in this section. Consistent across all studies and regions was a perception that organic food and beverage products are healthier, better for the environment and higher quality than their conventional counterparts. Other common factors include naturalness, nutritional quality, higher price, locally produced, vegetarian/vegan, as well as no use of pesticides and GMOs in production.

Table 4-1: Perceptions of and preferences for organic food and beverages (summary)

Country	Reference	Perceptions/Preferences
Belgium	Aertsens et al., 2011	Environment
		Health
		No pesticides
		Quality
		Taste
China	Xie et al., 2015	Health
		Food safety
		High price
		Low availability
Germany	Kriwy & Mecking, 2011	Environment
		Health
India	Finzer et al., 2013	No pesticides
		Health
	Chakrabati, 2010	Health
		No pesticides
		No GMOs
		Nutritional value
		Environment
	Sondhi, 2013	Health
		Environment
		Food safety
		High price
Indonesia	Wahida et al., 2013	Health
		Food safety
		Environment
Italy	de Magistris & Gracia, 2008	Health
		Quality
		Environment
Poland	Zakowska-Biemans, 2011	Health
		Food safety
Sweden	Gotze et al., 2016	Naturalness
		High price
		Locally produced
Taiwan	Chen, 2009	Health
		Environment
		Vegetarian/Vegan
	Hsu et al., 2016	Health
		Naturalness
	Liang, 2016	Nutritional value
		Environment
United Kingdom (UK)	Spiller, 2012	Locally produced
	Garcia et al., 2010	Health
		No pesticides
	Michaelidou & Hassan, 2007	Health
		Ethical reasons (general)
		Food safety

United States of America (US)	Onyango et al., 2007	Naturalness
		Vegetarian/Vegan
		Locally produced
Vietnam	Truong et al., 2012	Health
		Food safety
		Nutritional value
		Quality

4.2 Consumers' willingness to pay for organic food and beverages

There is also literature examining consumers' willingness-to-pay (WTP) premiums for organic food and beverage products. The following review examines current WTP literature across three international regions – North America, Europe and Asia. While more WTP literature exists for North American and European markets, some literature also exists for Asian markets (with an emphasis placed on China).

North America

There is literature examining North American consumer' WTP for organic food and beverages. Most studies have focussed on the US market for organics, with some studies focussing on Canadian consumers.

For US consumers, Gifford & Bernard (2010) examined the effect of new information on WTP for natural and organic chicken products. Participants were asked to indicate their level of knowledge regarding natural and organic food products, then bid on both natural and organic food products using an experimental auction. Following this, after being presented with information regarding both natural and organic foods, participants were asked to partake in a second auction, thereby eliciting differences in WTP pre- and post-information. Pre-information participants were willing to pay an average 12.8 per cent premium for organic food products, with post-information WTP increasing to an average of 14.8 per cent (Gifford & Bernard, 2010).

Similarly, Onken et al. (2011) examined US consumers' WTP for natural, organic, locally grown and state marketing program food products (specifically preserves). The study found that consumers from different states were willing to pay different premiums for organic products (average of 3 per cent extra), with natural products generally favoured over organics. In addition, the study found the consumers were willing to pay a premium for these products if purchased from a farmers' market (Onken et al., 2011).

Batte et al. (2007) examined US consumers' WTP for organic processed food products (specifically breakfast cereals) at two different retailer types (traditional grocery and specialty grocery), showing that consumers were willing to pay a premium for these products - even for those which contained less than 100 per cent organic ingredients. For traditional grocery,

premiums for different levels of organic ingredients differed, with 100 per cent organic ingredients having an average 28 per cent premium, at least 95 per cent organic ingredients an average 22 per cent premium, 70-94.9 per cent organic ingredients an average 17 per cent premium, and less than 70 per cent organic ingredients an average 13 per cent premium. For specialty grocery, premiums were much higher - for 100 per cent organic ingredients, participants indicated WTP an average 52 per cent premium, for at least 95 per cent organic ingredients an average 34 per cent premium, for 70-94.9 per cent organic ingredients an average 19 per cent premium, and less than 70 per cent organic ingredients an average 8 per cent premium (Batte et al., 2007).

For Canadian consumers, Akaichi et al. (2012) used an experimental auction to examine WTP for organic milk products. The authors found that, while consumers were generally willing to pay a premium for organic milk products, this premium decreased in line with the amount of milk purchased. The study also found that consumers' level of information about, as well as perception of the health aspects of, organic milk were important factors influencing consumers' WTP for these products (Akaichi et al., 2012). Furthermore, Hamzaoui-Essoussi & Zahaf (2011) specifically examined Canadian organic food consumers' WTP for organic food products, finding that lifestyle decisions rather than demographic factors positively affected their preferences for these products. In addition, WTP for organic food products varied across consumer types and products, with an average premium of up to 45 per cent for all consumer types and products observed (Hamzaoui-Essoussi & Zahaf, 2011).

Studies examining US consumers' WTP for labelled and/or certified organic products include Lee et al. (2013), who examined US consumer preferences and WTP for organic food products (specifically cookies, potato chips and yoghurt). The study found that participants believed organic food products to have lower calories, with participants willing to pay a premium for food products containing an organic label. In addition, participants were, on average, willing to pay an additional 23 per cent for organic yoghurt, 24 per cent for organic potato chips, and 16 per cent for organic cookies (Lee et al., 2013). Similarly, Strzok & Huffman (2015) examined US consumers' WTP for USDA-certifed organic food products, showing that consumers were willing to pay an average additional 28 per cent for coffee and 44 per cent for olive oil products with USDA organic certification over conventional alternatives.

Furthermore, Van Loo et al. (2011) examined US consumers' WTP for USDA-certified and non-certified organic chicken products, finding that differing purchase frequency of these products also defined different WTP brackets for these products. In particular, participants who never purchased organic chicken indicated a WTP of 26 per cent for USDA-certified and -30 per cent for non-certified products, while those who regularly purchased these products showed a WTP of 244 per cent for USDA-certified and 147 for non-certified. Occasional buyers showed a WTP of 97 per cent for USDA-certified and 36 per cent for non-certified products, with an average across all consumer segments of 104 per cent for USDA-certified and 35 per cent for non-certified organic chicken (Van Loo et al., 2011).

Yue & Tong (2009) examined US consumers' WTP for USDA-certified organic and locally grown-labelled tomatoes. The study found average price premiums for USDA-certified organic

and locally grown-labelled tomatoes to be exactly the same (US$0.67), with a higher premium associated with organic-certified and locally grown tomatoes (US$1.06) (Yue & Tong, 2009).

McFadden & Huffman (2017) examined US consumers' WTP for USDA-certified and natural-labelled apples, eggs and broccoli. The study found that consumers were willing to pay an additional 22 per cent for organic apples (from conventional apples), an additional 34 per cent for organic eggs (from conventional eggs), as well as an additional 30 per cent for organic broccoli (from conventional broccoli). The authors also found that female participants were more likely to pay organic premiums than male participants. In addition, higher income positively affected participants' WTP for organic food products. Finally, this study also found that premiums that participants were willing to pay a higher price when presented with information regarding organic production processes (from an additional US$0.28 to US$0.37) (McFadden & Huffman, 2017).

Europe

There is also literature examining WTP for organic food and beverages in Europe. Diaz et al. (2012) examined Spanish consumers WTP for organic tomatoes, finding their WTP was positively influenced by current levels of knowledge on organics. This study found a lack of knowledge about organics among Spanish consumers, as well as some confusion regarding the clarity of organic labels. However, consumers were willing to pay an average maximum premium of 45 per cent for organic tomatoes (Diaz et al., 2012). Similarly, Barreiro-Hurle et al. (2008) examined Spanish consumers' WTP for organic attributes in wine products, finding a WTP of approximately 15 per cent for organic over conventional attributes. In addition, de Magistris & Gracia (2016) examined Spanish consumers' WTP for country of origin (COO)-labelled, organic and light cheese products, finding the highest WTP for COO, followed by organic and light cheese, with WTP affected by demographic variables as well as participants' levels of environmental concerns (de-Magistris & Gracia, 2016).

Mondelaers et al. (2009) examined Belgian consumer preferences and WTP for organic food products, finding that consumers tended to view organics as premium quality products. In addition, the study found that consumers were willing to pay a premium for products with an organic label (Mondelaers et al., 2009). Botonaki et al. (2006) examined Greek consumers' WTP for certified organic food products. The study showed that, while their level of awareness of certification was low, their WTP for organic food products was higher among the more health-conscious consumers (Botonaki et al., 2006).

Pouta et al. (2010) examined Finnish consumers' preferences and WTP for chicken products, including an organic attribute. The study found that Finnish consumers were willing to pay approximately 5 per cent more for animal welfare-promoting chicken production than for organic production (Pouta et al., 2010). Similarly, Koistinen et al. (2013) explored Finnish consumer preferences for fat content, production methods and carbon footprint information for beef and pork products. The authors estimated average WTP for organic production to be an additional 4 per cent premium for organic pork, and an additional 7 per cent for organic beef (Koistinen et al., 2013).

Napolitano et al. (2010) examined Italian consumers' WTP for organic and conventional Pecorino cheese products, finding a higher WTP for organic (€3.00/100g) over conventional cheese products (€1.90/100g). Similarly, Vecchio et al. (2016) examined Italian consumers' WTP for organic yogurt, finding a WTP of an additional 26 per cent (€0.38) for organic over conventional yogurt. In addition, this study found that WTP for organic yogurt increased by an additional 6 per cent if participants were presented with information on organic farming (Vecchio et al., 2016).

Gschwandtner & Burton (2017) examined UK consumers' WTP for organic food attributes, finding a range of consumer segments exhibiting different respective WTP for organic chicken and carrots. The study found that consumers were willing to pay between £0.04 and £0.31 per 400 grams for organic chicken breast products, and between £0.05 and £0.36 per kilogram for organic carrots. In addition, the authors found that consumers were actually paying an average additional 60 per cent for organic chicken breast products, as well as an average additional 92 per cent for organic carrots. In total, 67 and 16 per cent of the sample purchased conventional and organic chicken breast products respectively, while 76 and 18 per cent of the sample and purchased conventional and organic carrots respectively (Gschwandtner & Burton, 2017).

Van Doorn & Verhoef (2011) examined Dutch consumers' WTP for "virtue" (i.e. healthy) and "vice" (i.e. unhealthy) organic food products, calculating WTP for an extensive range of product types. On average, participants were willing to pay an average premium of 33 per cent for virtue foods and 64 per cent for vice foods (Van Doorn & Verhoef, 2011).

Schrock (2014) examined German household expenditure data to determine the premiums paid for organic and country-of-origin labelled cheese products. The study found that German consumers paid, on average, an additional 18 per cent in discount retailers and 26 per cent in hypermarkets for organic cheese products (Schrock, 2014).

Different types of organic certification labelling may affect consumer WTP in Europe. Janssen & Hamm (2012) conducted a study to determine consumer preferences for specific organic product certification labels through choice experiments in six European countries, including the Czech Republic, Denmark, Germany, Italy, Switzerland and the United Kingdom. British consumers exhibited the highest WTP for products with the Soil Association organic label, as well as products labeled by the certification body 'Organic Farmers & Growers', as opposed to having no certification. In other markets, Swiss, Czech and Danish consumers are willing to pay most for the government organic logos varying from 53-56 per cent more for certified organic apples and eggs. In contrast, German consumers had the highest WTP which was almost the same for governmental and Demeter (private, international farmers certification) logos varying from 49 to 105 per cent more while in Italy consumers are willing to pay most for the EU logo varying from 53-56 per cent more for certified organic apples and eggs. Overall the highest WTP were for the logos that consumers knew and trusted, and which have perceived strict organic standards and control systems (Janssen & Hamm, 2012).

As mentioned above, Gerrard et al. (2013) examined UK consumer attitudes to certified organic food products, specifically Soil Association, Organic Farmers and Growers and EU

labels, as well as a generic organic claim with no logo. The study found that consumers were willing to pay an additional £1.01 for organic apples and £0.98 organic eggs with a Soil Association label, an additional £1.08 for organic apples and £1.12 for organic eggs with an Organic Farmers and Growers logo, and an additional £0.24 for organic apples with an EU organic logo (Gerrard et al., 2013).

Olesen et al. (2010) examined Norwegian consumers' WTP for organic and animal welfare-labelled salmon products, finding that consumers were willing to pay an additional 15 per cent (approximately €2 per kilogram) for organic- and Freedom Foods-certified products over conventional alternatives.

Rousseau & Vranken (2013) examined Belgian consumer WTP for organic-labelled food products, finding that consumers were willing to pay an additional average €0.33 per kilogram for organic-labelled apple products. After being presented with information regarding organic apple production processes (including the environmental and health benefits of organic production), participants increased their WTP by an average €0.57 per kilogram (Rousseau & Vranken, 2013).

Asia

In addition to North American and European studies of consumers WTP, some studies also exist for Asia. Managi et al. (2008) examined Japanese consumers' WTP or organic milk alongside other production attributes. The highest premium was shown for organic milk produced with greater restrictions on the use of medicine in production and the use of animal welfare practices, resulting in a WTP of a 115-154 per cent premium compared to the base scenario without these improvements (Managi et al., 2008).

Voon et al. (2011) examined Malaysian consumers' WTP for organic food products, showing that attitudes towards organic food (including trust, perceptions and health/environmental concern) had a positive effect on participants' WTP for organic food products.

Nandi et al. (2016) examined Indian consumer's WTP for organic fruit and vegetables, finding that 90 per cent of participants were willing to pay a premium for these products. Specifically, 48 per cent of participants were willing to pay between 10 and 15 per cent more for organic over conventional vegetables, with 20 per cent of participants willing to pay between 15 and 25 per cent more. In addition, the study found differences in willingness to pay between fruit and vegetable products, with 58 per cent of participants willing to pay between 5 and 25 per cent extra for organic fruits, and 81 per cent willing to pay between 5 and 25 per cent extra for organic vegetables (Nandi et al., 2016).

As previously discussed, Wahida et al. (2013) examined Indonesian consumer preferences for organic foods, including WTP for organic food products. The study found that participants were willing to pay an additional 20 per cent for organic chillies, an additional 22 per cent for organic mango, an additional 20 per cent for organic shrimp, and an additional 18 per cent for organic chicken. On average, for all commodities, half of the participants were willing to pay at least an additional 10 per cent for organic food products (Wahida et al., 2013).

Most studies regarding Asian consumer WTP for organic food and beverages were focussed on products with organic labels and/or certification. Chen et al. (2015) examined Chinese consumers' WTP for organic tomatoes carrying two different organic labels (Chinese and EU). The study found that consumers' WTP for organic products with an EU label was significantly higher than for those with a Chinese label. Respondents with knowledge of food safety and organics also showed higher WTP. Participants were willing to pay an additional 132 per cent premium for the inclusion of the Chinese organic label on a product, an additional 174 per cent premium for the inclusion of an EU organic label on a product, and an additional 180 per cent premium for the inclusion of both a Chinese and EU organic label (Chen et al., 2015). In addition, Yin et al. (2010) examined Chinese consumers' WTP for a range of organic food and beverage products, finding price, trust and health concerns to be key determinants of organic food purchase. Across all cities and product types, an average WTP of an additional 35.3 per cent premium was observed (see Table 4-2 for more product types) (Yin et al., 2010).

Zheng et al. (2013) explored Chinese consumer preferences for certification of non-GM and organic production practices, as well as country of origin. They found that a WTP of an additional 113 per cent (0.90 RMB) for organic soybean products certified by a U.S. agency as opposed to no claim. This was followed Chinese certifications for both organic and non-GM products (79 per cent). Of the different certification schemes, the lowest WTP was shown for EU certification (Zheng et al., 2013).

Huang et al. (2013) examined Taiwanese consumers' WTP for organic fresh milk products, based on their price/promotional status, product/brand, certified organic status and the presence of a Fresh Milk Logo. The study found certified organic to be associated with the highest WTP for these products, with participants willing to pay an average extra US$21.95 per year for these products (Huang et al., 2013).

Finally, Hu et al. (2006) explored Japanese consumers' WTP for a selection of credence attributes associated with canola oil, including an organic attribute. In particular, participants were willing to pay an additional 32 per cent (221 yen) for organic-certified canola oil products (Hu et al., 2006).

To conclude, participants across all studies in all regions demonstrated a willingness to pay an additional premium for organic food and beverage products. A summary of average premiums across the above studies, categorised by product and country, are presented in Table 4-2.

Table 4-2: Average WTP for organic production

Product	Country	Reference	Average WTP	
Generic food and/or beverages	Canada (2011)	Hamzaoui-Essoussi & Zahaf (2011)	Up to 45%	
Tomatoes	China (2015)	Chen et al. 2015	Chinese cert.: 132%	
			EU cert.: 174%	
			Chinese and EU cert.: 180%	
Soy milk	China (2013)	Zheng et al, 2013	US-certification: 113%	
			EU-certification: 56%	
			Chinese certification: 79%	
Pork	Finland (2013)	Koistinen et al, 2013	4%	
Beef			7%	
Milk	Japan (2008)	Managi et al, 2008	140-156%	
Oil	Japan (2006)	Hu et al, 2006	Certified organic: 32%	
Wine	Spain (2008)	Barreiro-Hurle et al, 2008	15%	
Apples	Czech Republic, Denmark, Germany, Italy, Switzerland, UK (2012)	Janssen & Hamm, 2012	Czech Republic:	EU cert.: 13%
				Government cert.: 56%
				Private cert. (international): 9%
			Denmark:	EU cert.: 14%
				Government cert.: 52%
				Private cert. (international): 14%
			Germany:	Government cert.: 51%
				Private cert. (international): 49%
			Italy:	EU cert.: 80%
				Private cert.: 48%
				Private cert. (international): 41%
			Switzerland:	Government cert. (fake): 18%
				Private cert.: 54%
				Private cert. (international): 33%
			UK:	EU cert.: 8%
				Private cert.: 26-33%
	Belgium (2013)	Rousseau & Vranken (2013)	Organic labelled	Pre-information: 33%
				Post-information: 57%
	US (2017)	McFadden & Huffman, 2017	USDA-certified: 21.5%	
Eggs	Czech Republic, Denmark, Germany, Italy,	Janssen & Hamm, 2012	Czech Republic:	EU cert.: 23%
				Government cert.: 53%
				Private cert. (international): 12%
			Denmark:	EU cert.: 20%
				Government cert.: 54%
				Private cert. (international): 22%

	Switzerland, UK (2012)		Germany:	EU cert.: 21%
				Government cert.: 92%
				Private cert. (international): 105%
			Italy:	EU cert.: 84%
				Private cert.: 56%
				Private cert. (international): 37%
			Switzerland:	Government cert. (fake): 23%
				Private: 77%
				Private cert. (international): 31%
			UK:	Private cert.: 27-36%
	US (2017)	McFadden & Huffman, 2017	USDA-certified: 34.1%	
Breakfast cereals	US (2007)	Batte et al., 2007	Traditional grocery	100% organic ingredients: 27.7%
				At least 95% organic ingredients: 21.6%
				70 to 94.9% organic ingredients: 17.3%
				Less than 70% organic ingredients: 12.7%
			Specialty grocery	100% organic ingredients: 52.0%
				At least 95% organic ingredients: 33.8%
				70 to 94.9% organic ingredients: 18.6%
				Less than 70% organic ingredients: 7.7%
Chicken	US (2011)	Van Loo et al., 2011	All buyers:	USDA-certified: 103.5%
				Non-certified: 34.8%
			Non-buyers:	USDA-certified: 26.2%
				Non-certified: -29.6%
			Occasional buyers:	USDA-certified: 97.3%
				Non-certified: 35.7%
			Habitual buyers:	USDA-certified: 244.3%
				Non-certified: 146.6%
	US (2010)	Gifford & Bernard, 2010	Pre-information: 12.8%	
			Post-information: 14.8%	
	Indonesia (2013)	Wahida et al., 2013	18%	
Broccoli	US (2017)	McFadden & Huffman, 2017	USDA-certified: 29.9%	
Preserves	US (2011)	Onken et al., 2011	2.9%	
Coffee and olive oil	US (2015)	Strzok & Huffman (2015)	USDA-certified coffee: 28%	
			USDA-certified olive oil: 44%	

Salmon	Norway (2010)	Olesen et al., 2010	15% (organic and welfare-certified)
Multiple food types	China (2010)	Yin et al. 2010	Grain: 29.7%
			Fruit and vegetables: 42.3%
			Meat: 39%
			Poultry and egg: 33.3%
			Aquatic products: 36%
			Milk products: 30.7%
			Processed foods: 36%
			Average (all product types): 35.3%
	US (2014)	Lee et al., 2013	Yoghurt: 22.8%
			Potato chips: 23.4%
			Cookies: 16.1%
	Indonesia (2013)	Wahida et al., 2013	Organic food (general): 10%
			Chillies: 20%
			Mango: 22%
			Shrimp: 20%

4.3 Importance of authentication schemes

Authentication schemes are important for consumers. The above mentioned studies from Saunders et al., (2015) and Guenther et al., (2015) also assessed consumers' attitudes towards difference authentication schemes for credence attributes. In the survey consumers in China, Indonesia, India, UK and Japan were asked to rate the importance of attribute authentication for food and beverages by type on a five-point Likert scale ranging from 'very important' to 'not important at all'. Authentication types included certification by the *participants' own country's government; other governments; independent private verifiers or globally recognised certification schemes; as well as the schemes from a brand, company, retailer* and *country of origin.* Results are shown in Figure 4-5 and 4-6; they are from a singular question within the survey.

As presented in Figure 4-5 and Figure 4-6, of all authentication types, the respondents' *own country's government certification* scheme was rated highest in importance, with the majority of Indonesian, Indians and Chinese indicating this authentication type is very important. A quarter of UK participants reported this authentication scheme to be very important. *Globally recognised authentication* was the second most important authentication type rated by participants across all countries with the majority of Indian, Indonesian and Chinese respondents selecting very important. The third most important authentication type across all countries was a product's *brand* with the majority of Indians and more than a third of Chinese and Indonesian respondents indicating this to be very important while for Japanese respondents particularly '*country of origin labelling*' was important with 30 per cent of respondents indicating this to be very important.

In summary, while Chinese participants rated globally recognised certification as the most important type of product authentication, participants from the UK, India and Indonesia indicated that their own country's government certification was the most important

authentication type. In contrast, Japanese participants stated that *country of origin authentication* was the most important type.

Figure 4-5: **Importance of different certification types in relation to authentication**

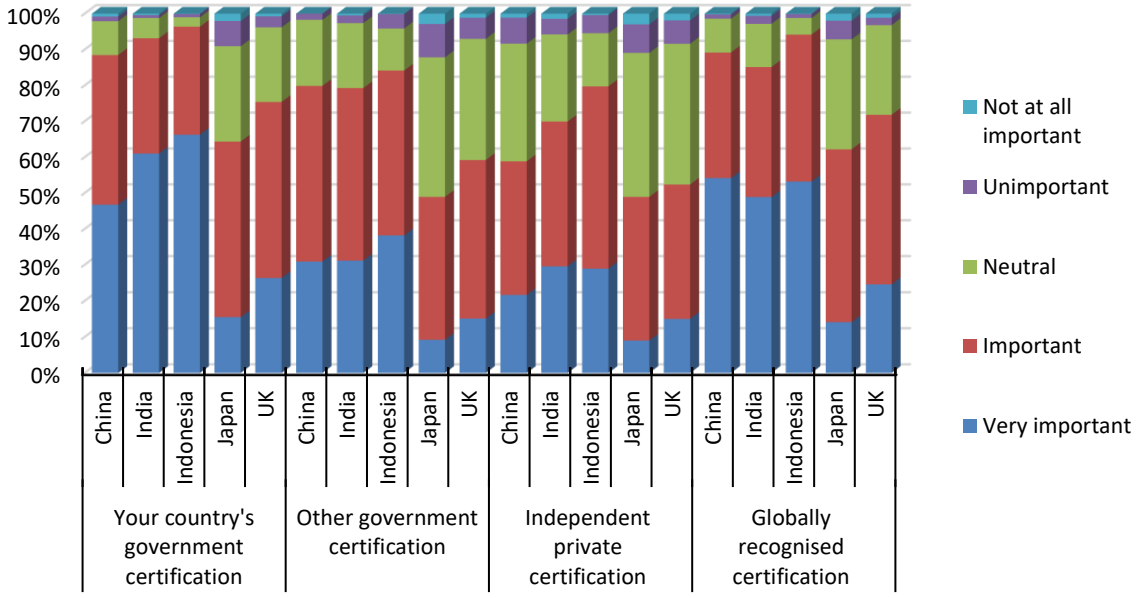
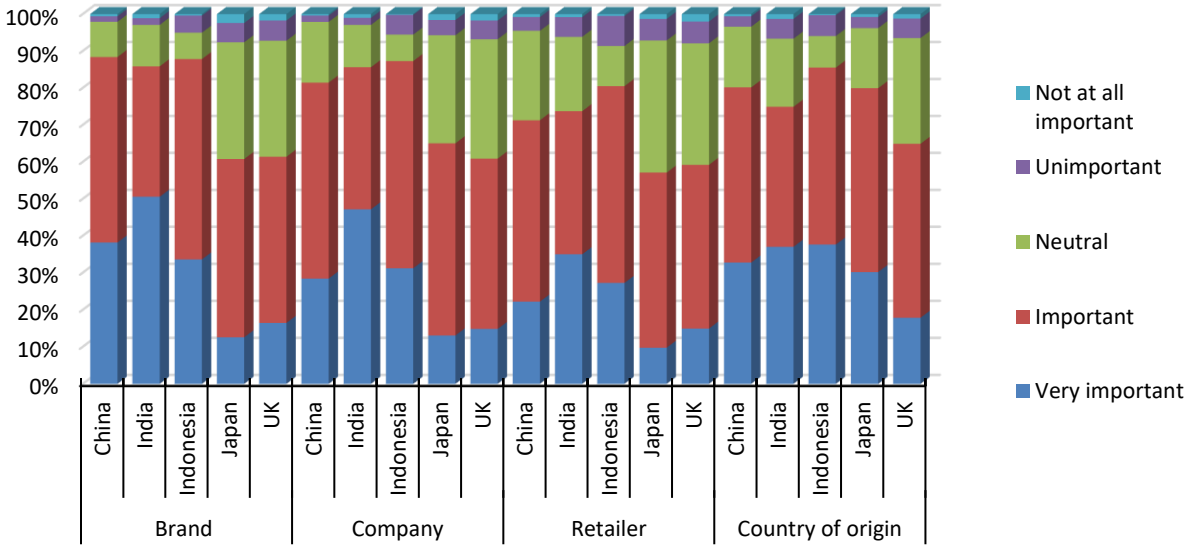


Figure 4-6: **Importance of different certification types in relation to authentication**



There is also other literature examining the importance of authenticity specifically in relation to organic food and beverages. Nuttavuthisit & Thogersen (2017) examined the role of trust in relation to Thai consumers' purchase of organic food, finding that mistrust in organic food control systems had a negative impact on self-reported organic food purchasing behaviour. This is in line with other studies that have found consumer trust in the authenticity of organic

products to influence positive perceptions and purchase intentions (Aertsens et al., 2009; Annunziata et al., 2011; Ramesh & Vivya, 2015).

In addition, Charlebois et al. (2016) found that Austrian consumers with mistrust in industry and regulatory bodies in relation to food products are more likely to self-authenticate product claims. More educated participants were more likely to distrust food product label claims. The study also found that participants who regularly read food product labels are also more likely to self-authenticate product claims (Charleois et al., 2016). Bryla (2016) found that, for Polish consumers, natural taste and product quality were the two most important factors in relation to the authenticity of an organic food product, followed by product labelling and the presence of an EU quality mark.

4.4 Conclusion

Based on the above literature review, consumer perceptions of the reason to purchase organic food and beverage products were reasonably homogenous across world regions (North America, Europe and Asia). Most studies examine consumer perceptions of organics in association with healthiness, environmental friendliness, higher food safety and a lack of pesticide use in production. Additional common associations included better quality, naturalness, high price, local production and better nutritional value.

There is also sufficient evidence to suggest that most consumers in the above regions are willing to pay a premium for organic products. However, these premiums vary significantly depending on a number of factors, including country, product type, demographic factors, and other product attributes.

Furthermore, the authentication of product claims, particularly in relation to organics, is important to consumers. Different methods of authentication are favoured by consumers in different countries, with trust in the authenticity of organic product claims playing an important role in consumer perceptions and purchase intentions.

Chapter 5
Organic retail channels in New Zealand

In this chapter, the use of alternative retailers, including physical retailer and distribution schemes, as well as Internet-based systems for consumer access to organic food and beverages is explored. This includes the use of farmers' markets, community supported agriculture and food box delivery schemes, as well as online platforms including online shopping, blogs and social media.

5.1 Consumer access to organic food and beverages via alternative retailers

New Zealand consumers may use alternatives to traditional retail channels for food and beverages, including organic products. This includes the use of such alternative retailers as farmers' markets, community supported agriculture (CSA) and food box delivery schemes. However, the use of these channels by New Zealand consumers is relatively low in comparison with mainstream retailers such as supermarkets (Miller et al., 2017).

Farmers' markets

Farmers' markets are a physical retail locations where consumers may purchase food products directly from producers (McNeill & Hale, 2016). Farmers' markets also have a significant role in the context of the organic food and beverage market and are often associated with the sale of organic food (Aguirre, 2007; Basil, 2012; Guthrie et al., 2006).

Some literature has examined New Zealand consumer attitudes to and preferences for the use of farmers' markets. Guthrie et al. (2006) examined the attitudes and perceptions of market managers, producers/growers and customers in relation to farmers' markets in New Zealand. The authors found that the key motivating factor for consumer use of farmers' markets was value for money, despite stallholders receiving higher price margins by adding value to products and selling directly to the public. In addition, stallholders' main motivation for selling at farmers' markets was to promote their products, while stallholders across most markets believed that high-quality fresh produce was a main attraction for customers (83 per cent), followed by lower prices (70 per cent) and the opportunity to meet the producer/grower (57 per cent). While this study provides insights into various agents' attitudes to and perceptions of farmers' markets in New Zealand, it is now relatively dated and may not provide information relevant to current attitudes and perceptions (Guthrie et al., 2006).

McNeill & Hale (2016) examined consumer attitudes and values in relation to a local farmers' market, defining three distinct consumer segments. The first segment ('committed loyals'),

comprising 42 per cent or participants, showed a preference for farmers' markets over all other retail types, perceiving products to be healthier, more natural and fresher, and likely to attend farmers' markets more frequently. The second segment ('experience oriented'), comprising 41 per cent of participants, perceived farmers' markets to constitute a fun and unique experience, thereby valuing the experiential aspects of farmers' markets over products. Finally, the third segment ('product oriented'), comprising 18 per cent of participants, attended farmers' markets in order to purchase more affordable produce with higher availability, and were more likely to purchase specific products and spend less time at farmers' markets overall (McNeill & Hale, 2016).

Miller et al. (2017) examined preferences of New Zealand consumers for alternative markets for food and beverages, including farmers' markets. When asked to indicate the frequency at which they shopped at farmers' markets, the majority of participants indicated that they never attend farmers' markets (44 per cent), followed by less than once a month (31 per cent), weekly (10 per cent), monthly (8 per cent) and fortnightly (6 per cent). Of those participants that shopped at farmers' markets on a fortnightly, 2-3 times a week or weekly basis, their main reasons included a good range and availability of high quality products, competitive prices and the experience of meeting the producer of the products. Conversely, for those participants that never shopped at farmers' markets or shopped on a less than monthly basis, their main reasons for not shopping more frequently included that the location and opening hours of farmers' markets were not convenient. When asked to indicate under what circumstances participants would shop at farmers' markets more frequently, their main motivating factors included an improvement in the convenience of markets' location and opening hours, as well as lower prices and better range and availability of products. In addition, the study found that New Zealand consumers spent an average of 3 per cent of their monthly grocery budget at farmers' markets (Miller et al., 2017). However, this study does not refer to organic food and beverages specifically.

Farmers Markets New Zealand Inc. (FMNZ) was established in 2005. It is the country's primary membership organisation for farmers' markets and vendors in New Zealand. As of May 2017, FMNZ listed 30 farmers' markets across New Zealand (16 in the North Island, 14 in the South Island). While farmers' markets are often associated with the sale of organic produce, FMNZ states that it does not primarily sell organic food and beverages (FMNZ, 2017).

FMNZ currently operates a voluntary verification scheme called *Authenticity* for all member markets. *Authenticity* has been implemented to improve integrity and transparency of farmers' markets and stallholders by validating participants' claims. Under the scheme, vendors operate under an operational framework that authenticates three key claims – 1) that the stallholder is a food producer, 2) that food is produced within a predefined local area (as defined by each market), and 3) that the vendor is directly involved in the production process for products sold. For a market to be considered authentic under this scheme, 70 per cent of vendors are required to have Certified Local status, while the remaining 30 per cent are required to have either Approved Local Producer or Permitted stallholder status. This is achieved through the use of first-party auditing methods, such as attendance logs and producer category charts, with no third-party auditing procedures currently in place. On certification, vendors and markets are permitted to use the official certification seal of the

scheme, as well as have priority in any national promotional activities. In addition, FMNZ offers different membership types, varying from Authentic Farmers Market (as discussed above) to Individual Supporter Member (for those who wish to contribute to the ongoing aims of FMNZ) (FMNZ, 2017).

There are more farmers' markets in New Zealand beyond those including in the FMNZ scheme. Table 5-1 presents the number of farmers' markets in New Zealand. Please note that this is intended to be an indicative rather than an exhaustive list of farmers' markets in New Zealand.

Table 5-1: Farmers' markets in New Zealand

	North Island	South Island	Total NZ
FMNZ Database	16	14	30
Other sources	21	9	30
Total	37	23	60

Source: FMNZ, 2017; OrganicExplorer, 2017; ADP, 2017; FCP, 2017; GFM, 2017; LCFM, 2017; WCM, 2017; WDC, 2017.

Community supported agriculture (CSA)

Community supported agriculture (CSA) is a subscription-based farming system wherein consumers invest in a particular farm, sharing the risks of agricultural production as well as its products. Members pay a subscription fee to farmers to share production costs, thereby owning a share in that farm's produce for the season (CIAS, 1996).

There are some organic CSA schemes in New Zealand. These include Wairarapa Eco Farm and Puramahoi Fields. Under the Wairarapa Eco Farm scheme, established in 2009, shareholders regularly receive delivered packages of fruit and vegetables, as well as the opportunity to visit the farm regularly, on payment of a one-off membership fee of NZ$50, with membership restricted to a total of 200 members (WEF, 2017). Under the Puramahoi Fields scheme, potential members may pay either a full share (NZ$1,104) or a half share (NZ$624) at the beginning of each season. Shareholders are then able to pick up produce from the Puramahoi Fields farm on a weekly basis. As of June 2nd 2017, the scheme is currently undergoing the organic certification process via OFNZ (Puramahoi Fields, 2017).

Food box delivery schemes

Similar to community supported agriculture, consumers may purchase organic food and beverage products through the use of food box delivery schemes, sometimes also known as vegetable box schemes. This is a system whereby consumer order a set amount of produce directly from a farm, which is then delivered within a particular geographical range. These schemes are significant in the context of organic food and beverages in that they often contain organic products (Brown et al., 2009). Box scheme operators may also use online mechanisms to promote their products and services (Venn et al., 2006).

Some studies examining New Zealand consumer use of food box delivery schemes exist. In one such study, Miller et al. (2017) examined preferences of New Zealand consumers for alternative markets for food and beverages, including food delivery services (excluding takeaways). When asked to indicate the frequency at which they shopped using these food delivery services, the majority of participants indicated that they had never used these services (89 per cent), followed by less than once a month (5 per cent), fortnightly and weekly (2 per cent respectively), and monthly (1 per cent). Of those that had shopped using food delivery services fortnightly, 2-3 times a week or weekly basis, the main reasons included the high quality of products, good customer service and product knowledge on the part of the service providers, and the availability of online shopping options. Conversely, for those participants that had never shopped using food delivery services or shopped on a less than monthly basis, their main reasons for not shopping more frequently included high prices, a general preference for other retailers, and dissatisfaction with product range/availability. When asked to indicate under what circumstances participants would shop more frequently using food delivery services, the main motivating factors included improved quality of products and the availability of online options. The authors also found that New Zealand consumers spent an average of 0.7 per cent of their monthly grocery budget on food delivery services (excluding takeaways). In addition, 57 per cent of participants indicated that they had previously heard of food box delivery programmes (Miller et al., 2017).

5.2 Digital Media

In addition to direct marketing activities, New Zealand consumers may also use online channels for accessing organic food and beverage products. This includes the use of online shopping, blogs and social media (such as Facebook, Twitter and Instagram).

Online shopping

Miller et al. (2017) examined New Zealand consumer use of digital media and smart technology, including online shopping channels for food and beverages. When asked to indicate the approximate share of participants' regular food and beverage shopping that was carried out online, the average share for New Zealand consumers was 6 per cent. In contrast, 11 per cent indicated to shop for products other than food and beverages. Following this, for those participants who stated they used online shopping for more than 5 per cent of their regular food and beverage shopping, a range of reasons was presented. For New Zealand consumers, the most common reasons for using online shopping for this purpose was the convenience of having products delivered to their homes (49 per cent), followed by cheaper prices (14 per cent) and an ability to make easier comparisons between products online (10 per cent) (Miller et al. 2017). However, while this study provides an overview of consumer use of online shopping, it does not contain -specific information on organic purchases.

While organic food and beverage products are available for purchase via the online shopping websites of major New Zealand supermarkets (Countdown, 2017), this review was focussed on alternative channels for organic purchases in New Zealand. Organic food and beverages can be purchased online from a variety of websites, however, many of these operate regionally with no national distribution mechanisms. Key examples include Organic Boxes

(Wellington), Soul Food Organic (South Island) and Vegebox (Auckland and Wellington) (Organic Boxes, 2017a; Soul Food Organic, 2017; Vegebox, 2017). The researchers identified three examples of e-commerce sites for dedicated organic food and beverage retail with nationwide distribution: Naturally Organic, Huckleberry and PantryZen.

Naturally Organic is a physical and online organic product retailer based in Auckland. The main product categories stocked include food and beverages (bakery; beverages; chilled; fruit and vegetables; grocery), baby products (including food), as well as health, household and personal products, with over 4,000 product lines available. In addition to their physical and online retail services, Naturally Organic also operates a nationwide certified organic fruit and vegetable box delivery service (Naturally Organic, 2017a).

Huckleberry is an organic retailer with a physical outlet chain and online store based in Auckland. The main product categories stocked include organic food and beverages (fruit and vegetables; chilled goods; freezer goods; bakery; meat; bulk goods; pastas, grains and rice; condiments; baking; breakfast foods; soup, stock and broth; canned food and dried legumes; chocolate, cookies and sweets; crackers, chips and snacks; drinks – hot and cold) as well as health and wellbeing products, baby products, cleaning products, homeware, stationery and books, gardening and pet care products. Their online store also allows the user to display products based on their dietary preferences, including dairy-free, certified organic, gluten-free, kosher, low GI, paleo, spray-free, sugar-free, vegan and vegetarian. In addition to their physical and online retail services, Huckleberry also operates a nationwide certified organic fruit and vegetable box delivery service (Huckleberry, 2017).

PantryZen is an online retail service for organic food and beverage products with no physical retail outlets. The company offers nationwide delivery using courier services, as well as electric bike delivery in selected regions of Auckland. Users are able to order products either online or via a dedicated iPhone application, with orders over NZ$30 eligible for free delivery. The main product categories stocked by PantryZen include organic food and beverages (baking and cooking, breakfast, drinks, fruit and vegetables, snacks) as well as baby, health, household and personal care products (PantryZen, 2017).

Also of note is Edesia – a self-described “online farmers’ market” which sells both conventional and organic products, specialising in New Zealand gourmet, artisan and health food products. The main product categories include fruit and vegetables, breads and wraps, dairy/dairy free, meat/poultry/fish/deli, sweets, and an “our shelves” category (including antipasto, bakery, baking, cereals, condiments, drinks, honey, oils and preserves). Several organic sub-categories are also available, including organic cheese (9 products), chicken (6 products), honey (11 products) and meat (11 products) (Edesia, 2017).

In addition to the above organic e-commerce sites, Out of Our Own Back Yards (shortened to ‘Ooooby’) is an online organic food and beverage shopping website. It is an international service with local offshoots, covering Christchurch, Auckland, Waikato and Bay of Plenty in New Zealand. Ooooby operates as an organic food box delivery service which allows users to order a pre-determined or customised sets of products, with additional information regarding the grower, method, certification status and location of origin of each part of their order.

Ooooby hosts a mixture of certified and non-certified organic producers and processors, with certification status for each grower listed on their website (Ooooby, 2017).

There are some e-commerce sites which give international consumers the ability to purchase New Zealand organic food and beverages. A notable example is Shop New Zealand, an online retailer which sells New Zealand products to international consumers, including New Zealand food and beverages as a product category. Organic Food is included as a sub-category, in which Shop New Zealand offers 35 products, including baby food, chili peppers and sauces. The website also offers free delivery within New Zealand and Australia, as well as free international shipping for selected products (Shop New Zealand, 2017).

Blogs

Organic food and beverage companies in New Zealand are also using other forms of online media to communicate with the wider public, such as blogs. Blogs are diverse in nature, but can be broadly defined as an online journaling system which allows users to regularly post content, including text and images, with additional social elements, such as the ability for viewers to comment on posts (The Balance, 2017). Currently, there are many New Zealand-based blogs focussing on organic food and beverages; these are created and maintained by a variety of users.

A key New Zealand-based blog pertaining to organic food and beverages is Be Good Organics. The core ethos of Be Good Organics is based on organic (certified organic, wild crafted, natural), environmental friendly (minimal packaging, recycling, carbon neutral) and ethical principles (plant-based, cruelty free, Fairtrade), and primarily features an online store offering organic food/beverage and other products. The blog also features recipes and other health and wellness information (Be Good Organics, 2017).

Organic food and beverage producers/suppliers also maintain an online presence through the use of blogs. This includes Ceres Organics, which maintains a regular blog integrated with its website. The blog features recipes for meals using organic ingredients, as well as other organic food-related materials (Ceres Organics, 2017b). In addition, organic beverages manufacturer Organic Mechanic also operates a regular blog integrated with their website. The blog hosts a variety of organic-related material under four main banners: food and nutrition, lifestyle and wellbeing, environment, and community (Organic Mechanic, 2017). Another example of a New Zealand-based organic blog is Organic Edible Garden and Kitchen, a blog focussed primarily on home production and preparation of organic food and beverages, which also features a shopping page for organic inputs (OEGK, 2017).

Social media

New Zealand organic food and beverage companies are using various forms of social media in order to better communicate with consumers. Social media is a collective term used to refer to online platforms which involve elements of community, content creation and sharing (Merriam-Webster, 2017). Examples include Facebook, Twitter and Instagram. Their use of by New Zealand organic food and beverage companies is discussed below.

Facebook

Facebook is the most widely used social media platform in the world today. As of April 2017, the social media service had approximately 1.97 billion users internationally, equating to roughly 768 million more users than the second-most used social media platform, WhatsApp (Statista, 2017).

In short, once a user has signed up for an account, they are able to add other users to their friends list, as well as publically post media in the form of text, photos and/or videos. A key function of Facebook is the ability to *like* a *page*. Pages on Facebook are created by businesses, brands, organisations and public figures and serve as a standalone public platform. Once a page has been liked, users will see posts from that page appear in their newsfeed, amongst posts from other users and pages they have added to their account. Pages on Facebook have several key functionalities:

1. Likes – this is the total number of users that have liked that page, and subsequently receive that page's content in their newsfeed.
2. Followers – this is the total number of users that have chosen to see a page's content in their newsfeed. By liking a page, a user automatically also follows it, while a user may choose to follow a page but not like it.
3. Visits – this usually applies to physical locations. A user may be able to indicate that they have physically visited the location that adheres to a particular page.
4. Ratings – users are able to rate the product or service that a page adheres to by submitting a rating out of 5, the average of which is displayed on that page.

   Source: Facebook, 2017

A brief search for New Zealand-based organic food and/or beverage companies currently operating a Facebook page found a range of business types and activities. These were categorised as producers, distributors, suppliers, retailers, restaurants/cafes and publications. An exemplary selection of these are presented in Table 5-2. For the purposes of this research, pages were removed from analysis if deemed to be irrelevant to organic food and beverages in New Zealand (e.g. organic health and beauty product pages). Please note that this is not intended to be an exhaustive list of organic food and beverage related Facebook pages in New Zealand. Table 5-2 shows that the organic food and beverage company Facebook pages with more followers tended to be producers, suppliers and distributors, with less followers typically shown for retailers and restaurants/cafes.

Table 5-2: Facebook pages for organic food and/or beverage companies in New Zealand (by likes)

Page/Company Name	Type/Activity	Region	Likes
Black Box NZ	Distributor	NZ-wide	150,040
Little Bird Organics	Producer/Supplier	NZ-wide	31,673
Ceres Organics	Producer/Supplier	NZ-wide	20,101
Only Organic New Zealand	Producer/Supplier	NZ-wide	19,477
Organic Mechanic	Producer/Supplier	Auckland	15,419
Chantal Organics	Producer/Supplier	NZ-wide	14,476
TradeAid	Retailer/Supplier	NZ-wide	11,493
Bostock's Organic Free Range Chicken	Producer/Supplier	Hastings	9,988
Commonsense Organics	Retailer	Wellington	9,535
Organic NZ Magazine	Publication	NZ-wide	8,672
Naturally Organic	Retailer	NZ-wide	7,873
Organic Boxes	Distributor	Wellington	4,970
Piko Wholefoods Co-operative	Retailer	Christchurch	4,877
EastWest Organics	Retailer/Supplier	NZ-wide	4,405
Organic Kitchen	Restaurant/Café	Auckland	3,266
GT Organics	Retailer	Christchurch	2,944
Naturalley Organic Café	Restaurant/Café	Dunedin	2,201
The Organic Food House	Retailer	North Canterbury	2,189
Street Organics NZ	Restaurant/Café	Auckland	1,236

Source: Facebook, above pages accessed 31/05/2017.

In order to analyse the ways in which organic companies in New Zealand are using Facebook pages, four specific pages representing different company types were selected for analysis: Ceres Organics (supplier), Bostock's Organic Free Range Chicken (producer), Commonsense Organics (retailer) and Organic Boxes (distributor).

Firstly, Ceres Organics is an organic food and beverage retail brand available across a range of New Zealand retailers. As at May 31st 2017, the company's Facebook page has 20,104 likes and 19,930 followers, with an 87 per cent response rate to messages and an average user rating of 4.7 out of 5 (Ceres Organics, 2017). The page has experienced growth in total likes over the past six months, increasing from 16,368 likes on December 13th 2016 to 20,093 on May 30th 2017 (+22.7 per cent). On average, the page has experienced moderate growth in likes of 27 per day, 83 per week and 393 per month (SocialBakers, 2017). Table 5-3 shows the proportion of likes for Ceres Organics' Facebook page across different countries (as at May 30th 2017).

Table 5-3: Proportion of likes from different countries, Ceres Organics Facebook page (as at May 30th 2017)

Country	No. of likes	% of total likes
New Zealand	17,549	87.3
Australia	1,248	6.2
United States	437	2.2
United Kingdom	151	0.8
Other (unspecified)	708	3.5

Source: SocialBakers, 2017.

While content featured on the Ceres Organics Facebook page varies, it mainly comprises photographs of Ceres Organics products in a prepared state, with links to recipes and other guides on food preparation. The page also features links to other social media platforms, including Twitter, Instagram and Pinterest, as well as links to promotional competitions and mailing lists (Ceres Organics, 2017a).

Bostock's Organic Free Range Chicken is a producer based in Hawekes Bay, providing organic free range chicken. As of May 31st 2017, the Bostock's Facebook page has 9,992 likes and 9,897 followers. While content featured on Bostock's Facebook page is diverse, it mainly comprises videos of agents at various points of the supply chain interacting with products (such as Bostock's farmers discussing the sustainability elements of their operation or chefs discussing their affinity for Bostock's products), as well as images of prepared Bostock's products and accompanying recipes. In addition, the page features links to contact the company (either by phone or directly by Facebook) (Bostock's, 2017b).

Commonsense Organics is a retailer based in Wellington, New Zealand, providing a variety of organic food and beverage products. As of May 31st 2017, the Commonsense Organics Facebook page has 9,534 likes and 9,385 followers, as well as an average rating of 4.8 out of 5. While content featured on the Commonsense Organics Facebook page varies, it contains a mix of posts regarding promotional competitions (featuring images of products), and links to news articles, videos and upcoming events relevant to organic foods. The page also features links to other social media accounts, including Instagram, as well as links to sign up for the Commonsense Organics newsletter and contact information (including phone, website and Facebook messaging) (Commonsense Organics, 2017).

Finally, Organic Boxes is a certified organic food box delivery programme based in Wellington, New Zealand. As of May 31st 2017, the Organic Boxes Facebook page has 4,971 likes and 4,846 followers, as well as an average rating of 4.7 out of 5. Content featured on the Organic Boxes Facebook page mainly shows links to news articles and videos relevant to organic foods. The page also features a link for placing online orders for organic food box deliveries (Organic Boxes, 2017b).

Facebook also allows users to establish virtual communities called "Groups". These allow users with common interests to interact using pages separate from their primary Facebook

newsfeeds. Groups usually operate with a predetermined purpose as defined by group administrators.

In the New Zealand organic market context, organic food and gardening groups have been established for the purpose of users either exchanging information about or trading organic goods. This includes groups interested in organic gardening and animal raising, organic growers connecting with and selling their products organic consumers, as well as general organic-related discussion.

For the purposes of this research, groups with less than 10 members or an indetermined purpose were excluded from the analysis. The main types/activities of groups found were for home production, specific companies/products, specific events or buying/selling organic products. Table 5-4 below presents Facebook groups relevant to organic food and beverages in New Zealand. This shows that the most popular types of groups in relation to organic food and beverages are those in relation to home production of organic food and beverages, while the least popular pages are in relation to the private purchase and sale of organic products.

Table 5-4: Facebook Groups relevant to organic food and beverages, New Zealand, May 2017

Page Name	Type/Activity	Members	Access
NZ Organic Gardening	Production (home)	1,336	Public
Organic Backyard Poultry NZ	Production (home)	775	Closed
Organic Veg/Edible Gardening Advice Aotearoa	Production (home)	640	Public
Sante Pure Organic Barley from New Zealand	Specific company	200	Closed
Sante Barley Organic – New Zealand	Specific company	144	Closed
Nutrients Organics Ltd	Specific company	114	Public
Organic Veg/Edible Gardening Advice Show and Tell	Production (home)	78	Closed
Organic Hub Hamilton NZ	Buying/selling	50	Closed
Beyond Organic NZ Tour	Specific event	30	Public
Organic Marketplace New Zealand	Buying/selling	19	Closed

Source: Facebook, above groups accessed 31/05/2017.

Organic food companies are also using other types of social media to promote and market their products and provide information to consumers. These include Twitter and Instagram, the use of which is discussed below.

Twitter

Twitter is a popular international social media service, with approximately 319 million users worldwide, as of April 2017 (Statista, 2017). Twitter has simple functionality, allowing users to create short messages (called “tweets”) containing a maximum of 140 characters which are posted publically. Users who have followed a particular account will see the tweets associated with that account in their newsfeed. Users are also able to “retweet” – reposting other user’s

tweets. In addition, Twitter pages accumulate followers, which represents the total number of users that have chosen to see a page's content in their newsfeed (Twitter, 2017).

A search for New Zealand-based organic food and/or beverage companies on Twitter found a range of business types and activities. Table 5-5 presents Twitter accounts relevant to organic food and beverages in New Zealand. This shows a high proportion of organic producers/processors using Twitter as a promotional and communication tool, with some retailers, suppliers, producer organisations and certifying bodies maintaining an active Twitter account.

Table 5-5: Twitter accounts relevant to organic food and beverages, New Zealand, June 2017

Account Name (Twitter ID)	Type/Activity	Followers
Organic Life (@organiclifenz)	Supplier	20,200
Wine Garagistas NZ (@Y2KXCollective)	Producer/Processor	10,200
Seresin Estate (@SeresinEstate)	Producer/Processor	4,929
Stonecroft Wine (@Stonecroftwine)	Producer/Processor	1,438
Naturally Organic (@organicNZ)	Retailer	1,252
Mahana Estates (@MahanaNZ)	Producer/Processor	1,040
Bellbird Spring (@BellbirdSpring)	Producer/Processor	766
Purebread (@nzpurebread)	Producer/Processor	723
Spaceman Coffee (@spacemancoffee)	Producer/Processor	678
Avohass (@Avohaus)	Producer/Processor	619
Organic Wine NZ (@OWNZwine)	Producer Organisation	567
BioGro New Zealand (@BioGroNZ)	Certifier	518
Clevedon Herbs and Produce (@clevedonproduce)	Producer/Processor/Retailer	513
Zealong Tea (@ZealongTea)	Producer/Processor	509
Organics Aotearoa New Zealand (@OANZ)	Producer Organisation	454
Churton Wines (@ChurtonWines)	Producer/Processor	360
No Compromise Coffee (@MachiattoNZ)	Producer/Processor	309

Source: Twitter, above users accessed 01/06/2017.

In order to analyse the ways in which organic companies in New Zealand are using Twitter, three specific accounts representing different company types were selected for analysis. These were Organic Life (supplier), Seresin Estate (producer) and Naturally Organic (retailer). Organic Life is an organic food and beverage supplier based in Auckland, they are active since September 2011. As of June 1st 2017, Organic Life's Twitter account has approximately 20,200 followers and 87 tweets. While content featured on the Organic Life Twitter account varies, it mainly comprises retweeted images of food products asserting the benefits of consuming organic food and other health and diet related posts (Organic Life, 2017).

Seresin Estate is an organic winery and olive oil producer/processor based in the Marlborough region. They are active since June 2009. As of June 1st 2017, Seresin Estate's Twitter account has 4,929 followers and 3,066 tweets. The content featured on the Seresin Estate Twitter

account shows promotional images relating to Seresin Estate wine products and events, as well as retweeted images of their wine products (Seresin Estate, 2017).

Naturally Organic (as discussed above) is a physical and online organic food product retailer based in Auckland, active since October 2009. As of June 1st 2017, Naturally Organic's Twitter account has 1,252 followers and 1,872 tweets. Content featured on the Naturally Organic Twitter account mainly comprises links to the retailers' Facebook posts, including information about stocked products, recipes and events (Naturally Organic, 2017b).

Instagram

Instagram is a popular international social media service, with approximately 600 million users worldwide as of April 2017 (Statista, 2017). Instagram content consists primarily of photographs and videos, which are enhanced with the use of visual filters before being posted under a user's account. Users are able to follow other users and, like the other social media platforms previously discussed, accumulate followers. The service also has integrated functionality with Facebook, allowing users to simultaneously post Instagram content on both Facebook and Instagram (Instagram, 2017).

A search for New Zealand-based organic food and/or beverage companies on Instagram found a range of business types and activities. Table 5-6 presents Instagram accounts relevant to organic food and beverages in New Zealand. This shows that, within the organic sector of New Zealand, the service is being used mostly by producers, processors and suppliers of organic food and beverage products, with some use by organic food and beverage retailers and foodservice outlets.

Table 5-6: Instagram accounts relevant to organic food and beverages, New Zealand, June 2017

Account Name (Instagram ID)	Type/Activity	Followers
Ceres Organics (ceresorganics)	Supplier	28,000
Little Bird Organics (littlebirdorganics)	Producer/Processor	18,300
Organic Mechanic (theorganicmc)	Producer/Processor	14,000
Soul Organics (soulorganics)	Producer/Processor	2,741
Naturally Organic NZ (naturallyorganicnz)	Retailer	2,449
Chantal Organics (chantal_organics)	Supplier	1,105
Organic Knowledge (organicknowledgenz)	Producer/Processor	607
Bostock's Organic Chicken (bostockchicken)	Producer/Processor	593
Organic Kitchen (organickitchennz)	Retailer	474
Soul Food Organic (soulfoodorganic)	Retailer	325
Natureally Organic Café (natureally.dunedin)	Restaurant/Café	325
Earthbound Honey (beesatearthboundhoney)	Producer/Processor	216
Bostock Organic Kitchen (bostockorganickitchen)	Restaurant/Café	179
BioFarm Organic (biofarmorganic)	Producer/Processor	107
Elmwood Organic (elmwood_organic)	Producer/Processor	83
All Organic New Zealand (allorganicnz)	Producer/Processor	71
Organic Purebread (purebreadnz)	Producer/Processor	62

Source: Instagram, above users accessed 01/06/2017.

In order to analyse the ways in which organic companies in New Zealand are using Instagram, three specific accounts representing different company types were selected for analysis: Ceres Organics (supplier), Bostock's Organic Chicken (producer) and Naturally Organic (retailer).

Ceres Organics' (as discussed above) Instagram account mainly features photographs of Ceres Organics products in a prepared state, with links to recipes and other guides on food preparation. This content is also used on Ceres Organics' Facebook page (as discussed above) (Ceres Organics, 2017c).

Next, the Bostock's Organic Chicken's (as discussed above) Instagram account mainly features images of prepared Bostock's products and accompanying recipes, as well as photographs of various elements of the Bostock's farm. Many elements of this content is also used on the Bostock's Organic Chicken Facebook page (as discussed above) (Bostock's, 2017c).

Finally, Naturally Organic's (as discussed above) Instagram account mainly features photographs of products stocked by the retailer, usually depicted in a prepared state, and other promotional materials (Naturally Organic, 2017c).

5.3 Conclusion

New Zealand consumers are able to access organic food and beverage products through the use of alternative retailers, such as farmers' markets. There is sufficient evidence to suggest that some segments of New Zealand consumers attend farmers' markets regularly, indicating an ability to access high quality, fresh and healthy products, get better value for money, as well as meet the producer or grower of their food/beverage products as main motivating factors for this. Howver, this does not refer to organic food and beverages specifically.There are currently approximately 60 farmers markets in regular operation in New Zealand, with approximately 30 of these participating in Farmers' Markets New Zealand's verification scheme *Authenticity*. In addition, New Zealand consumers can also purchase organic food and beverage products through participation in CSA and food box delivery schemes.

New Zealand consumers can also access organic food and beverage products using online channels. While there are numerous e-commerce sites selling organic food and beverage products in New Zealand, there are less sites which provide national shipping/distribution and/or offer exclusively organic products. Examples of these include physical and online retailers Naturally Organic and Huckleberry, and online-only retailers PantryZen and Edesia. In addition, there are also food box delivery schemes with online operations (such as Ooooby), as well as e-commerce sites with international distribution for New Zealand organic food and beverage products (such as Shop New Zealand).

Other online channels by which New Zealand consumers can access organic food and beverage products include blogs and social media (such as Facebook, Twitter and Instagram). While online shopping features are available on a number of these services, they are used mainly for promotional purposes. A wide range of organic operators are using these services, including producers, processors, suppliers, retailers, distributors and restaurants/cafes.

Chapter 6
Conclusion

There is no consistent data on the domestic organic market in New Zealand. Different sources were used to define the market and its players. In New Zealand, the total area of organic land and organic operations have decreased recently, however the organic land area for horticulture and for mixed/ other organic is growing. Organic horticulture is important in New Zealand's organic production with the key players of Bostock's New Zealand in Hawkes Bay for organic apples and Zespri for organic kiwifruit. Also, organic wine is a fast growing sector in the organic market with more than 5 per cent of New Zealand's wine production either certified organic or in conversion. The main organic wine producers in New Zealand are Seresin Estate Ltd; Villa Maria Estate Ltd and Yealands Estate Wines Ltd. In the organic dairy sector, approximately 25,000 dairy cows are under organic management, and there are two main buyers of organic milk: Fonterra and the Organic Dairy Hub Co-operative (Dairy Hub NZ). With regards to the organic meat sector, most organic beef and lamb producers are members of the Organic Dairy and Pastoral Group (ODPG) and the main players in the organic meat market are ANZCO Foods, Harmony and Ingleby Farms.

New Zealand has four certifiers for organic producers, processors, retailers and products. BioGro NZ and AsureQuality are the largest certifiers and they are IFOAM accredited. NZ Biodynamics Association and Organic Farm NZ are the other two certifiers. These four certifiers list currently approximately 1,230 organic producers, processors, retailers and products. However, this is only an approximate as information/ lists on certified producers were difficult to retrieve from a couple of certifiers. The number of organic operations have dropped in recent years, in 2015 there were 1,500 licensed operations which decreased by 15 per cent since 2012.

Domestic consumption of organic products is growing. In 2015, organic product sales accounted for NZ$167 million in New Zealand supermarkets and the Research Institute of Organic Agriculture (FiBL) estimated overall retail sales of organic products at approximately NZ$192 million (124 million Euros) in 2015 with a growth of 52 per cent from the previous year. The majority of organic products are sold in supermarkets and smaller shares are sold in specialty shops and farmers markets.

New Zealand organic produce is predominantly exported and organic exports are growing. In 2015, these were valued at NZ$240 million with the largest share from fruit and vegetables and dairy. Interestingly, despite drops in organic land area for livestock organic dairy exports grew significantly in recent years. The increase in organic dairy exports is led by demand in overseas markets which are projected to grow in the future. New Zealand's main export markets for organics are Europe, North America, Australia and China. Organic exports to China are likely to increase in the future as New Zealand is the first country to sign a mutual recognition arrangement for organic certification with China due to come into effect in mid-2017.

Globally, the organic market is growing and is projected to grow in the future. New Zealand is heavily dependent on its agricultural exports and in 2015 almost 1 per cent of its exports were organic products. Eight overseas markets with projected growth in the organic food and beverages sector were identified with potential for increased organic exports from New Zealand. These were the USA, China, Australia, United Kingdom, Germany, France, Japan and the Republic of Korea (formerly South Korea). For each country, import standards for organic products from New Zealand were reviewed. Similar to New Zealand, Australia has no mandatory requirement for certification of organic product sold domestically. However, foods imported to Australia, must be labelled in accordance with the Food Standards Code developed by Food Standards Australia New Zealand (FSANZ). With some other countries New Zealand has signed an equivalency agreement through the Official Organic Assurance programme (OOAP) which facilitates the export of organic products. This includes Japan and the EU. For the US, New Zealand's OOAP has been acknowledged by the USDA and AsureQuality and/or BioGro organic standards are recognised to be certifiable under their US National Organic Program (NOP). However, for organic exports to the US, New Zealand exporters are required to comply with two sets of technical rules for organic production and processing - the OOAP Technical Rules of Production and the NOP standards. For China, New Zealand is the first country to sign a mutual recognition arrangement for organic certification due to come into effect in mid-2017. With regards to Korea, MPI submitted an application to the Korean authorities for an equivalence determination of the OOAP Standards and Technical Rules. Korea is aiming for a full bilateral equivalence agreement. The planned agreement however, would only cover processed products (including wine). Until then, organic exports need to be certified directly to the Korean standard which is mostly issued by the New Zealand accreditor *Doalnara* in Korea.

Understanding consumer preferences and attitudes towards organic food in these countries is important for New Zealand. Preferences, attitudes and willingness-to-pay for organic products claims differs across countries but overall consumers in overseas markets value organic product claims positively. Most studies examine consumer perceptions of organics in association with healthiness, environmental friendliness, higher food safety and a lack of pesticide use in production. Additional common associations included better quality, naturalness, high price, local production and better nutritional value. Overseas consumers are also willing to pay more for organic products, with premiums varying and depending on several of factors, including country, product type, demographic factors, and other product attributes. Authentication schemes for organic product claims are also important for consumers.

New Zealand consumers are accessing organic food and beverages through a number of channels, including alternative retailers (such as farmers' markets) and online channels (such as e-commerce). There is sufficient evidence to suggest that some segments of New Zealand consumers attend farmers' markets regularly, citing an ability to access high quality, fresh and healthy products, get better value for money, as well as meet the producer or grower of their food/beverage products as main motivating factors for this. However, this does not refer to organic food and beverages specifically. There are currently approximately 60 farmers markets in regular operation in New Zealand, with approximately 30 of these participating in Farmers' Markets New Zealand's verification scheme Authenticity. In addition, New Zealand

consumers can also access organic food and beverage products through participation in CSA and food box delivery schemes.

New Zealand consumers can also access organic food and beverage products using online channels. While there are numerous e-commerce sites selling organic food and beverage products in New Zealand, there are less sites that offer national shipping/distribution and/or offer exclusively organic products. Examples of these include physical and online retailers Naturally Organic and Huckleberry, and online-only retailers PantryZen and Edesia. In addition, there are also food box delivery schemes with online operations (such as Ooooby), as well as e-commerce sites with international distribution for New Zealand organic food and beverage products (such as Shop New Zealand).

New Zealand organic food and beverage companies are also using various forms of digital media (including blogs and social media) in order to better communicate with consumers. These include services such as Facebook, Twitter and Instagram, which are being used by a wide range of organic operators, including producers, processors, suppliers, retailers, distributors and restaurants/cafes.

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